

historic structures report

GIANT FOREST  
**SEQUOIA**



NATIONAL PARK / CALIFORNIA





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**A Historical and Architectural Study of  
Three Rustic Structures at Giant Forest in Sequoia National Park  
The Market, District Ranger's Residence, and Comfort Station**

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**HISTORIC STRUCTURES REPORT  
SEQUOIA NATIONAL PARK**

Approved  
December 7, 1988

**National Park Service  
U.S. Department of the Interior  
1989**







## PREFACE

This report includes an administrative summary, statement of archeological compliance, historical data, existing condition assessment, architectural/engineering analysis and treatment recommendations for three structures in the Giant Forest Village/Camp Kaweah Historic District, a property listed on the National Register of Historic Places. The Giant Forest market, comfort station, and district ranger residence with its garage will be the only buildings left in the village when most visitor services are relocated to areas of Sequoia National Park outside of the prime natural resource zone.

The report was prepared as part of the advance planning effort associated with moving development out of the Giant Forest area. It reflects requirements of the "Cultural Resource Management Guidelines" (NPS-28) necessary in this effort because activities are programmed that will affect the qualities that make the property eligible for National Register listing. A fundamental purpose of this historic structures report (HSR) is the identification of cultural values that should not be adversely affected in the process of accommodating the proposed activity. The intention of the rehabilitation work is to protect these values for visitor enjoyment while continuing a useful life for the ranger residence and comfort station and an adaptive use for the market.

The report is the product of input from a multidisciplinary team of historical architects, engineers, and a historian from the NPS Denver Service Center in consultation with park superintendent Davis, members of his staff, cultural resource personnel from the NPS Western Regional Office, interpretive planners and designers of the NPS Harpers Ferry Center, and personnel from Guest Services, Incorporated, the park concession operator. Participants are listed at the end of the report and gratitude is expressed to each for making thoughtful and professional contributions.

C. Craig Frazier  
Denver, February 1988



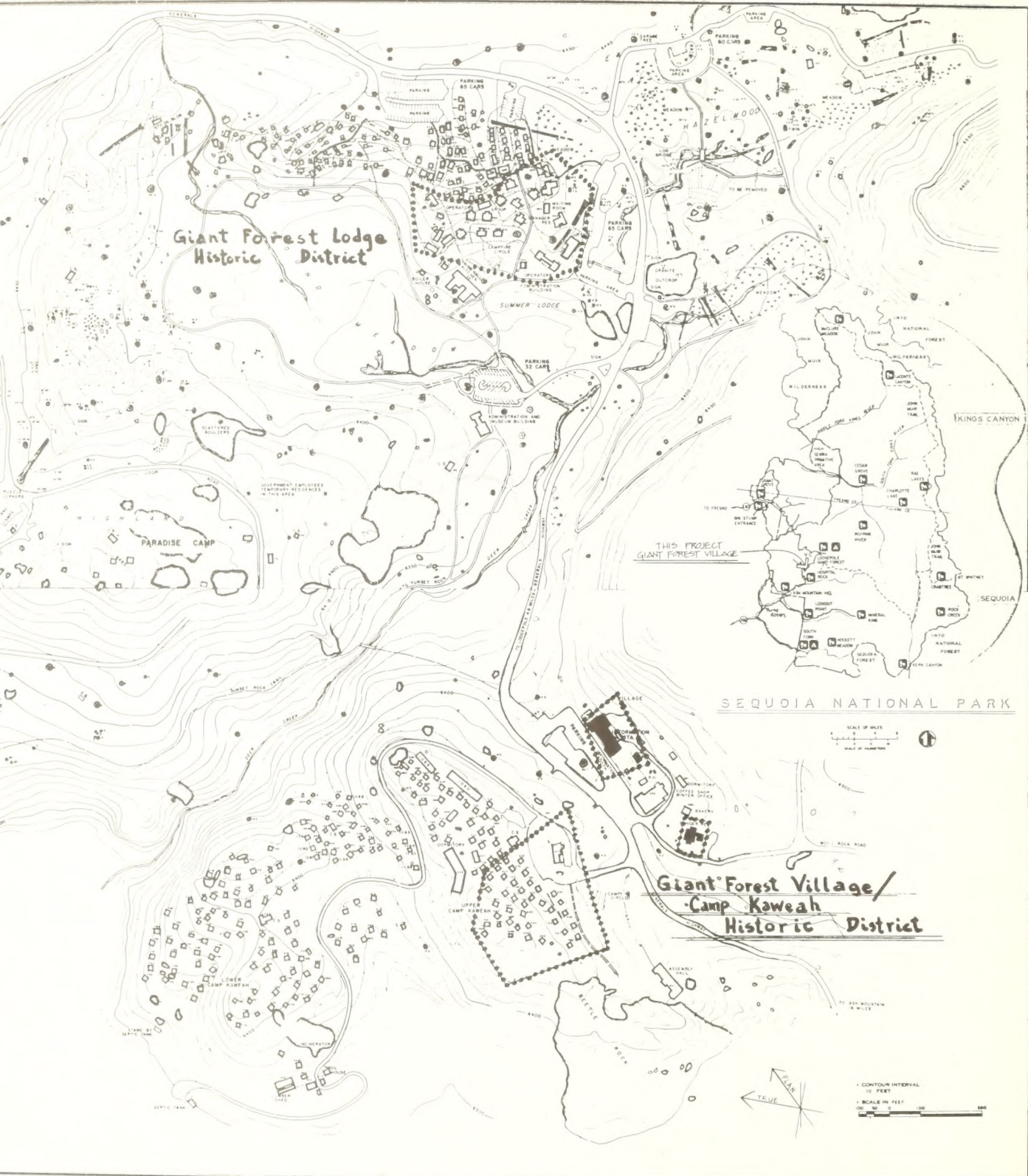


Figure 1a - Location map. This map shows the central developed area of Giant Forest including Giant Forest Village/Camp Kaweah historic district. The insert map indicates Giant Forest Village is at the west side of Sequoia National Park which was established September 25, 1890. The historic district boundaries are approximate. The map is a modified version of drawing NP-SK/2104-C (1963) which was derived from NP-SEQ/4729 (1930, revised to 1940) and NPS 102/40,068 (1977) showing the "proposed historic districts". The insert map is from "cover sheet" 102/20,003A (1973) as reproduced on the HSR drawings (102/25,000).



# GIANT FOREST VILLAGE

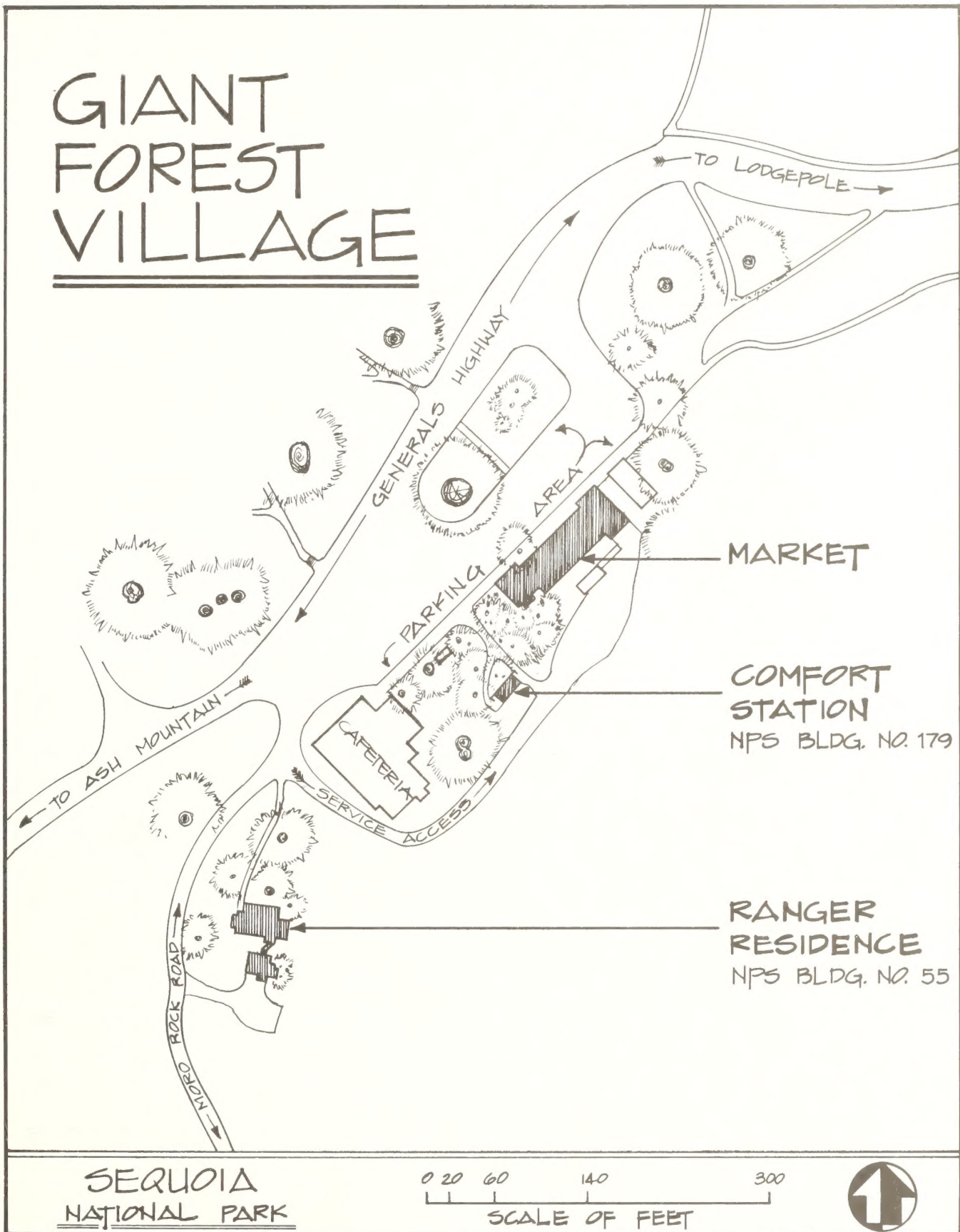


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## ADMINISTRATIVE DATA







## ADMINISTRATIVE SUMMARY

### Purpose

For three reasons the National Park Service (NPS) has decided, through the development concept planning process (DCP 1980) to convert Giant Forest to a day use area:

- to reduce development-associated impacts on the giant sequoia grove, the prime resource of Sequoia National Park;

- to eliminate the adverse general environmental impacts resulting from the present inadequate waste water disposal system which serves extensive overnight lodging, food service and maintenance facilities; and

- to improve the delivery of information and enhance interpretive experiences for park visitors.

To implement this development intention new facilities will be built in areas of the park outside of the primary natural resource zone and development in the Giant Forest will be removed except for the minimum necessary to serve day use visitors. Some of the development to be removed and three buildings that will remain are located within the Giant Forest Village/Camp Kaweah Historic District, a property entered in the National Register of Historic Places (1978). This historic structure report (HSR) is part of the measures of mitigation necessary under the Memorandum of Agreement (1978) adopted as part of the DCP to reduce the adverse cultural resources impacts of the DCP undertaking.

Three historic buildings that will remain in Giant Forest--the market, comfort station, and ranger residence/garage--are cited in the DCP as necessary to provide day-use services, visitor orientation, information, and resource interpretation and protection. These three buildings are acknowledged as historically distinguished resources of the park. They



require treatment--preservation and rehabilitation--to continue in service. These treatments must be accomplished within the limitations set forth in "Cultural Resource Management Guidelines" (NPS-28). This HSR is a requisite of the guidelines because of the actions planned that will have an impact on the historic property. Thus, in the first place, the HSR is an impact assessment and mitigation instrument.

This document is, secondly, a management tool--requested by park and regional managers--developed in order to provide details of how treatment is to be accomplished in light of the decisions made in the DCP. The HSR is part of the advance planning phase concerning the movement of visitor service development out of Giant Forest and has been prepared well in advance of the proposed construction year because of the complexity involved and to facilitate orderly budget cycle phasing. It is anticipated that an Area Study will be conducted in FY 89-90 to resolve larger scale issues for the redevelopment of Giant Forest as a day-use area. Then in FY 91-92 preliminary drawings would be prepared based on this HSR and the Area Study and would include additional architectural input from the concessioner and exhibit design input from the NPS Harpers Ferry Center. Historic structure construction documents would then be prepared in FY 93 and the work contracted for implementation in FY 94.

Thirdly, this document, in order to properly serve management, is also a research report, a systematic inquiry into a series of interrelated subjects framed to reveal the facts and therefore clarify management questions for an enlightened treatment decision making. As a research document, the HSR is a technical report derived from the particular skills of trained historians, historical architects, engineers, and other cultural resource specialists. In this respect, the results of the research endeavor form an advisory position concerning the treatment of the historic structures that is one aspect of the manager's decision-making process, which also includes the broader contextual issues of social, political, and financial considerations.



Being a technical research report prepared by NPS personnel for NPS decision makers, the basic mandate for formulating questions and for decision making is the same: what is the best strategy to achieve conservation of the resources while providing for their use and enjoyment and also leaving them unimpaired? Thus, the questions answered in the HSR (and documented as a matter of record) will, organically, provide a sound basis for, and be a useful tool in, the park management process.

A summary of basic questions answered in this report follows.

### Identification of Structures

The buildings examined in this HSR are cultural resources identified with themes of both regional and local significance (Management Policies, Chapter V, significance category IIb). This resource category label was applied to them in 1977 to assure their proper management under the legislated requirements of the National Historic Preservation Act (1966 as amended). They have been placed in NPS management category 'A'--structures that must be preserved. They are:

Giant Forest Market (referred to as 'the market') a one-story exposed wooden framed building of about 4000 square feet, is not currently owned by the National Park Service and not yet listed on the List of Classified Structures (LCS)--see LCS information below. It was designed by Gilbert Stanley Underwood and built by the Sequoia and General Grant National Parks Company beginning in August 1928.

Giant Forest Village Comfort Station (referred to as 'the comfort station') a one-story exposed wooden framed building of about 350 square feet, is identified as NPS #179 and on the LCS as #05029. It was designed by Merel S. Sager, an NPS landscape architect, and built in 1932.



Old Giant Forest District Ranger's Residence and Garage (referred to as 'the ranger residence/garage') a one-story exposed wooden framed building of about 1140 square feet, is identified as NPS quarters #55 and on the LCS as #05028. It was also designed by Sager and was built in 1931. The one-car detached garage is frame with wood siding and about 600 square feet.

The buildings are in the Giant Forest Village Historic District, Sequoia National Park, Tulare County, California. (Note: The garage is not listed on the LCS. The National Register nomination form says "neither the snowshed nor the garage is deemed to have architectural or historical significance." For the purposes of this report, they are addressed as utilitarian extensions of the ranger residence. The garage does not meet the criteria for individual listing. It and the more recent snow shed could be removed were it not for their utility.) The district is significant at the regional level in the field of recreation and of local significance in the fields of architecture, landscape architecture, and literature. Under the "statement of significance" in the National Register nomination form, the following is written:

Values requiring management in the three significant Giant Forest Village structures are primarily related to external visual appearance. The market, the ranger residence, and the comfort station should be preserved without significant external modification. The definition of alteration should be sensitive enough to prevent alterations to roofs, doors, windows, external wall surfaces, paint colors, etc. Further, with regard to the residence, the natural surroundings should be preserved to the highest degree possible without endangering the structure. Reasonable adaptive use of the interiors will not interfere with identified values.

The "Historical Data" section provides an expanded statement of significance and describes the construction, use, and modification history of each building. The "Architectural/Engineering Data" section provides an expanded statement of architectural significance, a physical description, and an evaluation of existing conditions for each building.



## Proposed Use of Structures

Giant Forest will become a day use area when current overnight accommodations, food service and maintenance facilities are removed and relocated to the new development at Clover Creek and Red Fir. The subject structures will house park functions to support day use visitor activities and resource protection. In particular, according to the DCP, the conversion of the Giant Forest District to a day use area will involve: "the Giant Forest Market, the adjacent comfort station, and the ranger residence, all three shall be retained and preserved. The market will be adaptively used as an information facility; the comfort station and ranger residence will continue to serve their present function." The plan further notes that the comfort station will be converted to a self-contained recirculating toilet system and the market building will be converted to an information/contact station for visitors and will serve that function until a staging area becomes operative. The structure will then become an interpretive facility and serve an information function during the off-season.

Because of their historical values, the buildings should also be used as objects of interpretation. They are relics of the NPS-Rustic design movement, which stipulated a particular stylistic imperative for park development structures, an architectural philosophy worthy of appreciation. This should be explained to park visitors as a subtheme of the park's primary mission to provide a "pleasuring ground." The subtheme is based on the acknowledgement that development of the park in the early days following establishment by Congress was necessary to support visitor enjoyment and that supporting structures would be designed so as not to impair the natural wonders for which the park was created. The buildings are relics expressing that culturally significant developmental imperative, worthy of protection and interpretation.



Figure 2. Giant Forest Market, View from West (5/86). Built in 1928-29 by concessioner, the market will be purchased by NPS and adaptively rehabilitated in FY 94. It will become the central day-use visitor contact facility in Giant Forest once other development is relocated to Clover Creek. The exterior of the market will be preserved.

Figure 3. Comfort Station, View from West (5/86). Built in 1932 by NPS, the comfort station will continue in use for the non-handicapped day-use visitor to Giant Forest. The interior architectural, mechanical and electrical systems will be rehabilitated; the exterior preserved.

Figure 4. Ranger Residence (10/86). Built in 1931 by NPS, the ranger residence will continue to serve as quarters for NPS employees. Rehabilitation was largely completed in 1983. The recommendations in the HSR are primarily aimed at exterior preservation.

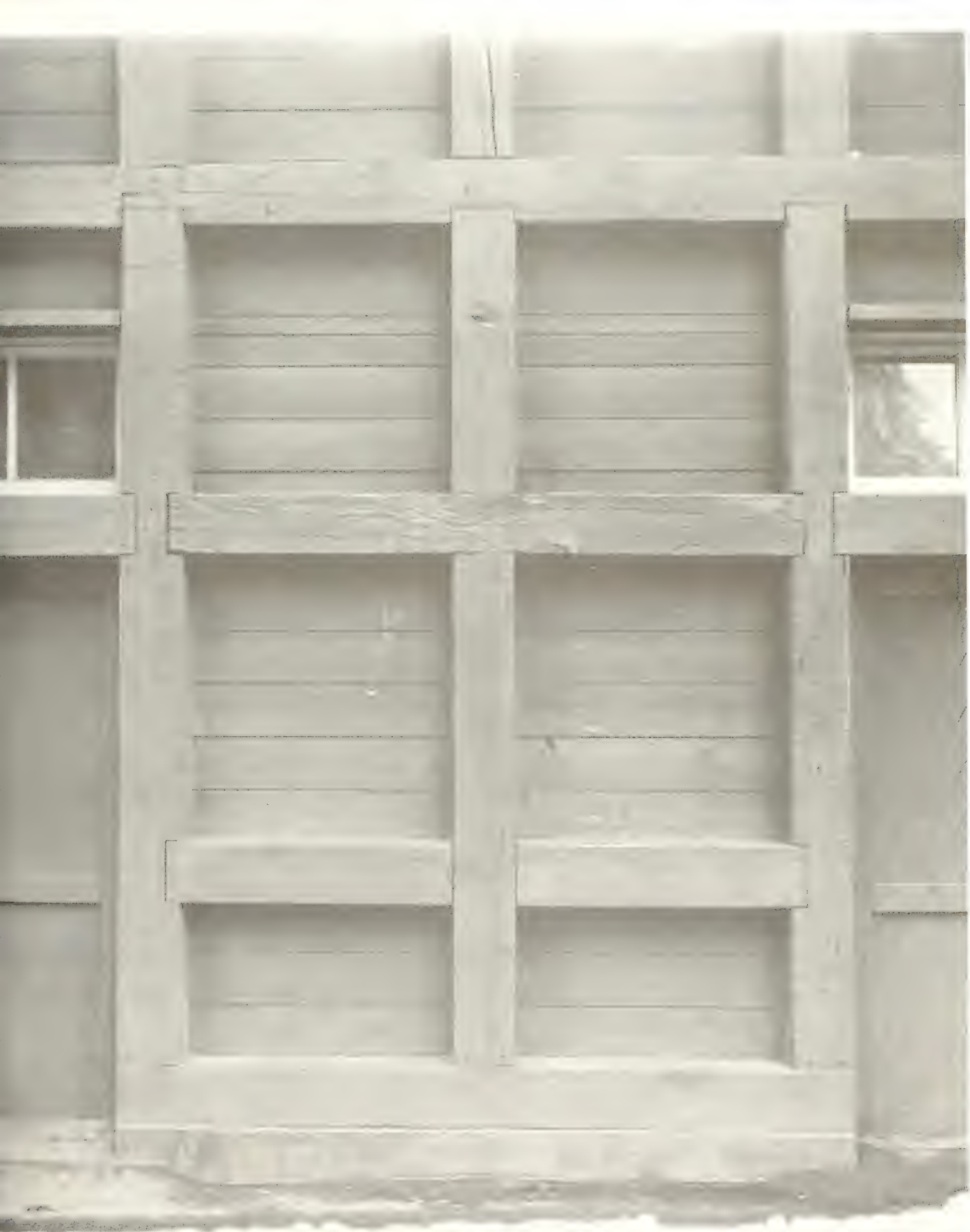






Figure 5. Giant Forest Rustic (ca. 1983). This detail view of the market wall embodies essential stylistic characteristics of the historic structures of Giant Forest Village: the exposed timber framing, simplistic geometry of line, and use of color and materials which are compatible with the natural setting. (HABS #CA 2148 B-5)







## Recommended Changes in Proposed Use of Structures

The proposed use is as stated above except:

Market Functions--In addition to the information/contact function of the market, the director of the National Park Service has determined that it should also provide, in half of its floor space, for a concession operation as follows: "Food sales will be over the counter, non-alcoholic beverages along with beer (but no wine), finger foods/snacks such as pre-wrapped sandwiches, hot dogs, chips, pretzels, crackers, candy bars, sweet rolls and other items of the snack type approved by the Superintendent. There will be no seating, no on-site food preparation or hot food items served except what can be warmed by microwave oven or similar quick heating devices (hot dogs, chili, soup). All service will be with disposables so that water and sewer needs will be at a minimum." (Letter, July 10, 1984, to Mr. S.J. DiMeglio, President, Guest Services, Inc., from Acting Director Mary Lou Grier, NPS)

Comfort Station Mechanical Systems--Conversion of the comfort station to a self-contained recirculating toilet system is not recommended because such systems have not proven satisfactory and because such a modification is not necessary at this time. The existing flush toilet system is appropriate. The decision to continue the existing flush system could be reversed (reverting to the DCP suggestion) if sewage loads on the current effluent disposal systems cannot be sufficiently reduced--to satisfy environmental standards--by removing most of the development out of Giant Forest. Resolution of the waste treatment issue is beyond the scope of this HSR and must await the results of the Area Study scheduled for FY 89 which should include a sanitary engineering study. It is assumed for the purpose of this HSR that there will not be a change in the mechanical technique or use of the comfort station.



In addition, modification of the comfort station to accommodate handicapped persons is not recommended. Instead, an alternate handicapped-accessible toilet facility would be provided as part of the proposed market rehabilitation.

### Justification

Justification for continued use of the comfort station and ranger residence/garage and adaptive use of the market is stipulated in the DCP (1980). The director's memorandum of July 10, 1984 provides additional information concerning concessioner activities in the market. Because the three buildings are specifically cited for their historical and architectural significance as part of the historic district listed in the National Register, the use and treatments associated with the proposed development shall conform to cultural resource management guidelines (NPS-28). An evaluation of the proposed and continued use of the market, comfort station, and ranger residence/garage is presented in the Architectural/Engineering Data, Implications of Proposed Use subsection. The Compliance with Regulations subsection provides a checklist of treatment imperatives necessary to comply with standards, guidelines, and pertinent NPS policies.

The HSR is necessary because of the anticipated major intervention and adaptive use proposed for these historic structures and possible effects on "the qualities and characteristics that make the properties eligible for inclusion in the National Register" (NPS-28, Ch. 2, p. 21). Furthermore, treatment is justified because of the architectural significance of the buildings, because of the proposed change in use of the market, and to facilitate park development objectives. An assessment of the effect of these activities is presented in the Architectural/Engineering Data, Assessment of Effect subsection.



## Proposed Treatment of Structures

Consistent with the Memorandum of Agreement (see Appendix E) the three buildings "will remain in situ". As a result of the historic architectural analysis contained in this report, it is recommended to adaptively rehabilitate the market interior while stabilizing and preserving the exterior to include the continuum of changes through the early period of the building up to about 1938 when extant rear additions were built. This adaptive rehabilitation/preservation approach would in effect "restore" the market exterior to its ca. 1938 appearance without involving a major exterior intervention. The first ten years in the history of the market witnessed a complexity of changes so that an attempt to "restore" it to any specific date prior to 1938 would involve conjecture, may create a condition that never existed and may not meet the criteria for such an intervention under NPS-28 (1985, p. 3.8). See discussion of partial restoration alternative in Appendix H. The comfort station and ranger residence/garage, too, would receive exterior preservation treatments. In affect these treatments would generally restore the comfort station to its 1932 appearance and the ranger residence to the 1950s appearance because it includes a 1953 addition which would not be removed. The comfort station would be rehabilitated on the interior to facilitate its continued use at contemporary standards. Only minor treatments of a rehabilitative nature are recommended at the ranger residence/garage because most of the necessary rehabilitative treatments were done in 1983. The National Register form indicates "reasonable adaptive use of the interiors will not interfere with identified values."

The full scope of exterior preservation and interior rehabilitation treatments is included in the Recommendations subsection. Briefly, the proposed work includes the following:

General work common to the market, comfort station, and ranger residence/garage:

preservation by reroofing and replacing flashing;



installation of energy conserving features to include insulation, weatherstripping, and double-glazing of windows that are to be rehabilitated;

site modifications to reverse negative surface drainage and reestablish grades below sill plates;

upgrading life safety features by installing a centrally monitored fire detection/warning system;

various repairs to preserve exterior appearances including crawl space door, gate, downspout, and gutter at ranger residence, doors and windows at comfort station and market, masonry repointing at residence and market, soffit and rafter tail repairs at market, and removal of some modern accretions as incidental part of new utility system installation;

continued preservation and appropriate maintenance by developing and implementing a historic structure preservation guide (HSPG).

Specific work to each building:

#### Market Building--

interior rehabilitation as necessary to meet proposed adaptive use needs including removal of disfunctional partitions and fixtures, fire code upgrade of walls, replacement of plumbing, electrical and heating/ventilation systems, and installation of new floor finish in 1938 additions;

interior/exterior alterations as necessary to meet accessibility standards including site grading and new walks and installation of a new door to serve a new unisex handicapped accessible toilet facility;



stabilization work including rotted floor joists and some wall frame replacement, installation of seismic connections, eradication of wood insect infestation, reinforcement of roof structure, installation of a retaining wall system, and rehabilitation of crawl space ventilation system;

other preservation work will include repainting and chimney rehabilitation

#### Comfort Station--

interior rehabilitation will include replacement of wall surfaces for fire code upgrade and cleanability, replacement of piping and electrical wiring, replacement of stall partitions, and installation of ventilation system.

#### Ranger Residence/Garage--

exterior preservation as necessary to ensure building continues to meet existing use needs including repainting, chimney clean-out, and installation of spark arrestor at chimney; also, replacement of crawl space piping and fuel storage tank.

### Impact Summary

There would be an impact on each of the structures as a result of the proposed use and the treatments recommended to facilitate that use. The use impact would, generally, not exceed current levels, which are not adverse. Preservation maintenance should, in the long run, improve as a result of the occupancy, use, and operational recommendations proposed. (See "Implications of Proposed Use" in Architectural/Engineering Data section.)



There would be an effect on the historic structures as a result of the undertaking; however, that effect would not be "adverse". The actions fall within the measures as set forth in the "Memorandum of Agreement" between the Advisory Council on Historic Preservation and the Western Regional Office of NPS (1978) and concurrence has been given (1988, see Appendix E). The treatments will leave the integrity of the building exteriors and the few interior cultural values unimpaired although the interior of the market and comfort station would be altered. The preservation and rehabilitation approach would not preclude additional restoration in the future, while at this stage, would preserve the continuum of compatible changes. Treatment and continued use of the buildings would help to assure their proper protection and maintenance and provide the opportunity for their interpretation for the benefit and enjoyment of park visitors. (Recommendations to mitigate the effects of the undertaking are presented in "Assessment of Effect," subsection.)

There would be no increased adverse impacts on the surrounding giant sequoia grove (the primary park resource) as a result of this project, while the undertaking would correct current building preservation deficiencies, would involve specific modifications to facilitate approved use, would prevent future deterioration of the market building, comfort station, and ranger residence/garage, and would satisfy congressional requirements for public access and interpretation.

#### ASSOCIATED MANAGEMENT CONSIDERATIONS

##### Project Cost

Net construction cost (FY 88 materials and labor but not including civil engineering scope to be determined by Area Study)		
Market	\$343,000	
Comfort station	50,000	
Ranger residence/garage	<u>56,000</u>	\$449,000
Location factor (15%)		67,000
Class 'B' estimating contingency (10%)		45,000
Contractor overhead and profit (30%)		<u>\$168,000</u>
Contract Total	\$729,000	
Escalated to FY 94 (30%)		\$948,000

Note: See cost breakdown in Cost Estimate subsection of Architectural/Engineering data.



## Project Phasing

- FY 88
  - approval of HSR recommended treatments
  - conduct an inspection to identify interim preservation treatments that should be undertaken prior to FY 94
  - begin archeological survey in advance of Area Study
  - begin topographic mapping in advance of Area Study
- FY 89-90
  - conduct Area Study of Giant Forest redevelopment which will address large scale issues that have design implications for the treatment scope of the market, comfort station and ranger residence/garage (see Scope of Work for Area Study in Recommendations subsection)
  - fee simple acquisition of market
  - conduct interim and emergency preservation treatments
- FY 91-92
  - prepare preliminary design drawings (type 06) for rehabilitation/preservation including HFC exhibit design and concession design proposals for the market
- FY 93
  - prepare historic structure construction documents (type 36)
- FY 94
  - construction contract
  - begin HSPG on a schedule for implementation at completion of construction

## Private-Sector Agreements

Currently a concessioner, Guest Services, Inc., owns and operates the market. The concession agreement expires in 1991. The National Park Service intends to obtain fee simple ownership of the market in the near future. A new concession contract will include provisions to cover operation of the food service and gift shop proposed for the north half of the market. This agreement will conform to requirements stipulated in NPS-28 (1985, p. 3-26). It is anticipated under the agreement that, except for normal and customary janitorial services, the Park Service would become responsible for the ongoing preservation maintenance of the market. Final design and operation covenants for the concession-operated half of the market must be coordinated with and included in the concession agreement. The proposed rehabilitation drawings for concession functions in this report are very schematic and conceptual.



Therefore, specific considerations and limitations on developments proposed by the concessioner are stipulated in the compatibility guidelines of the Recommendations subsection.

The development of a cooperative agreement with Sequoia Natural History Association may involve sales and distribution of their books in the market. Whether this function occurs in the concession half of the building or in the visitor contact/interpretive half has not been resolved. The decision concerning the cooperative agreement should be made prior to preparation of final preliminary design drawings so that this design parameter can be appropriately incorporated.

Recommendations for Documentation, Cataloging, Conservation,  
and Storage of Any Objects, Documents, Records, Photographs, Etc.,  
Produced as a Result of this Study

This historic structure report is a catalog and documentation of key basic data regarding the market, comfort station, and ranger residence/garage. Paint samples and other fragments of historic fabric collected during the course of investigations will be turned over to the park for accessioning and appropriate storage. Objects, samples, or other conservation materials cited throughout the HSR use the designation "as per park archive collection." Under the Future Considerations subsection of the Architectural/Engineering Data are additional recommendations for documentation during construction.

Proposed Operations

Staffing. In addition to concessioner sales personnel, the market will be staffed by interpreters who will provide orientation and information to visitors. Also, NPS policy stipulates the need to provide interpretation of the market building, comfort station, and ranger residence/garage themselves. Interpretive planning and media design is beyond the scope



of this HSR, but future project programming will consider this potentiality as directed by the Interpretive Prospectus (January 1986). In addition, park staff would inspect and by occupation and surveillance would provide ongoing protection to all three buildings and would open and secure the market building and comfort station as necessary to accommodate visitors as a result of this undertaking.

These operational changes would affect staff assignments and may affect staffing levels in Giant Forest.

Maintenance. There would be an increased maintenance role for the National Park Service as a result of this undertaking. Specifically, maintenance of the market, upon its acquisition, would become the responsibility of the park staff. In addition, the remaining historic structures of Giant Forest Village will be the subject of an HSPG, which may stipulate an increased level of preservation maintenance. All three structures should be added to cyclic maintenance programming lists. Also, the cost of heating, lighting and providing water and sanitary services at the market will become an added expense to the park budget. Energy conserving measures are recommended in this HSR, however, a significant additional utility cost should be anticipated.

#### BASIC DATA

Environmental Assessment--Development Concept Plan, Giant Forest Area, Sequoia and Kings Canyon National Parks. Denver: Denver Service Center, NPS/DOI, 1982.

Development Concept Plan--Giant Forest/Lodgepole, Sequoia and Kings Canyon National Parks. Denver: Denver Service Center, NPS/001, 1980.

Letter to Mr. S.J. DiMeglio, President, Guest Services, Inc., from Acting Director Mary Lou Grier, NPS, July 10, 1984, C3823 (680).



Tweed, William C., Soulliere, Laura E. and Law, Henry G. National Park Service Rustic Architecture. San Francisco: Western Regional Office, NPS/DOI, 1977.

"National Register of Historic Places Inventory--Nomination Form," Entries in the National Register State California. Sacramento: Office of Historic Preservation, 1978.

Cultural Resources Management Guideline NPS-28. NPS/DOI, 1985.

Interpretive Prospectus: Giant Forest/Clover Creek. Harpers Ferry Center, January 1986.

#### LIST OF CLASSIFIED STRUCTURES (LCS)

The following pages include a copy of the LCS printout for the comfort station and ranger residence and a proposed LCS Field Inventory Report to facilitate listing of the market upon NPS acquisition.



Figure 6. LCS Printout--Comfort Station

Figure 7. LCS Printout--Ranger Residence



05029 179 GIANT FOREST VILLAGE COMFORT STATION A MUST BE PRESERVED ENTERED ON REGISTER 05/27/78  
 BUILT BY NATIONAL PARK SERVICE IN 1933  
 WOOD BUILDING  
 FEE SIMPLE HISTORIC  
 PRESERVATION NO MGMT AGREEMENT  
 GMP STABILIZATION: \$0 1/75  
 00/00/80 TREATMENT: \$0 1/75  
 CURRENT USE: OTHER LEVEL OF ESTIMATE: C REGION  
 COMFORT STATION  
 STABILIZATION: OTHER THAN NPS  
 ROUTINE MAINTENANCE: NPS RESPONSIBILITY  
 CYCLIC MAINTENANCE: NPS RESPONSIBILITY  
 ULTIMATE TREATMENT: OTHER THAN NPS

*Updated 1/1/88*

05029 179 GIANT FOREST VILLAGE COMFORT STATION A MUST BE PRESERVED ENTERED ON REGISTER 05/27/78  
 BUILT BY NATIONAL PARK SERVICE IN 1933<sup>2</sup>  
 WOOD BUILDING  
 FEE SIMPLE HISTORIC  
 PRESERVATION/Rehabilitation NO MGMT AGREEMENT  
 GMP/HSR STABILIZATION: \$0 1/75  
 00/00/80/88 TREATMENT: \$65,500 \$0 1/75 1/88  
 CURRENT USE: OTHER LEVEL OF ESTIMATE: C REGION L.C.  
 COMFORT STATION  
 STABILIZATION: OTHER THAN NPS  
 ROUTINE MAINTENANCE: NPS RESPONSIBILITY  
 CYCLIC MAINTENANCE: NPS RESPONSIBILITY  
 ULTIMATE TREATMENT: OTHER THAN NPS

05028 055 OLD GIANT FOREST DISTRICT RANGER'S RESIDENCE A MUST BE PRESERVED ENTERED ON REGISTER 05/27/78  
 HOUSE BUILT BY NATIONAL PARK SERVICE IN 1931  
 WOOD BUILDING  
 FEE SIMPLE HISTORIC  
 PRESERVATION NO MGMT AGREEMENT  
 GMP STABILIZATION: \$0 1/75  
 00/00/80 TREATMENT: \$0 1/75  
 CURRENT USE: NPS QUARTERS LEVEL OF ESTIMATE: C REGION  
 STABILIZATION: OTHER THAN NPS  
 ROUTINE MAINTENANCE: NPS RESPONSIBILITY  
 CYCLIC MAINTENANCE: NPS RESPONSIBILITY  
 ULTIMATE TREATMENT: OTHER THAN NPS

*Updated 1/1/88*

05028 055 OLD GIANT FOREST DISTRICT RANGER'S RESIDENCE A MUST BE PRESERVED ENTERED ON REGISTER 05/27/78  
 HOUSE BUILT BY NATIONAL PARK SERVICE IN 1931  
 WOOD BUILDING  
 FEE SIMPLE HISTORIC  
 PRESERVATION/Rehabilitation NO MGMT AGREEMENT  
 GMP/HSR STABILIZATION: \$0 1/75  
 00/00/80/88 TREATMENT: \$36,000 \$0 1/75 1/88  
 CURRENT USE: NPS QUARTERS LEVEL OF ESTIMATE: C REGION DSC  
 STABILIZATION: OTHER THAN NPS  
 ROUTINE MAINTENANCE: NPS RESPONSIBILITY  
 CYCLIC MAINTENANCE: NPS RESPONSIBILITY  
 ULTIMATE TREATMENT: OTHER THAN NPS



Figure 8. LCS Report (proposed)--Market



LCS FIELD INVENTORY REPORT - INPUT/CORRECTION SHEET

IDLCS: \_\_\_\_\_

STRUCTURE #: \_\_\_\_\_

(3) OR CODE: \_\_\_\_\_

(4) NAME: Giant Forest Market

NPS LEGAL INTEREST: FEE

FEE - FEE SIMPLE  
FER - FEE SIMPLE RESERVATION  
LTF - LESS THAN FEE  
NOF - NONE-OTHER FEDERAL AGENCY OWNED  
NOL - NONE-LOCAL GOVERNMENT OWNED  
NOP - NONE-PRIVATELY OWNED

>>> (6) FEE SIMPLE LIFE-CODE L OR (7) \_\_\_\_\_ EXPIRATION DATE

>>> (8) \_\_\_\_\_ FEEOWNER  
>>> (9) \_\_\_\_\_ LOCOWNER

STRUCTURE TYPE: BU

BR = BRIDGE  
BU = BUILDING  
CA = CANAL  
CM = CEMETERY  
DA = DAM  
MN = MONUMENT/STATUE  
ES = ENGINEERING  
FA = FARM  
FE = FENCE  
FT = FORTIFICATION  
GA = GARDEN  
LI = LIGHTHOUSE  
LS = FORMAL LANDSCAPE  
OTHER: \_\_\_\_\_

MD = MOUND  
MI = MINE  
RD = ROAD  
RR = RAILROAD  
RU = RUIN  
SS = SHIP  
TM = TOMB  
WA = WALL  
WC = WATER CONTROL  
WF = WHARF/DOCK  
WL = WELL  
OT = OTHER

AD = ADOBE  
BK = BRICK  
CO = CONCRETE  
EA = EARTH  
LG = LOG  
MT = METAL  
ST = STONE  
WD = WOOD  
OT = OTHER

(11) COMPOSITION: WD

(12) PERIOD OF CONSTRUCTION: H1

PH = PREHISTORIC  
HI = HISTORIC  
BO = BOTH

(13) NAT. REG. STATUS: 1 DATE: 5/22/78

1 - ENTERED-DOCUMENTED  
2 - ENTERED-UNDOCUMENTED  
3 - DETERMINED ELIGIBLE-KEEPER  
4 - DETERMINED INELIGIBLE-KEEPER  
5 - DETERMINED ELIGIBLE-SHPO  
6 - DETERMINED INELIGIBLE-SHPO  
0 - UNDETERMINED

MANAGEMENT CATEGORY: A

A - MUST BE PRESERVED & MAINTAINED  
B - SHOULD BE PRESERVED & MAINTAINED  
C - MAY BE PRESERVED & MAINTAINED  
D - MAY BE DISPOSED/DEMOLISHED/ALTERED

(15) MANAGEMENT AGREEMENT: CC

CA = COOPERATIVE AGREEMENT  
SU = SPECIAL USE PERMIT  
CC = CONCESSION CONTRACT  
LL = LEASE  
NO = NONE  
OT = OTHER  
OTHER: \_\_\_\_\_

(16) TREATMENT RESPONSIBILITY

(A) ☒ NPS - OTH: STABILIZATION  
(B) ☒ NPS - OTH: ROUTINE MAINTENANCE  
(C) ☒ NPS - OTH: CYCLIC MAINTENANCE  
(D) ☒ NPS - OTH: APPROVED ULT. TREAT.

DATE: \_\_\_\_\_

(7) CURRENT INTERIOR USE: VC & VF

CF = HIST. FURN.  
CM = MUSEUM/STOR.  
NA = OFFICE  
NI = MAINTENANCE  
NV = NPS QUARTERS  
OO = VACANT  
OTHER: \_\_\_\_\_

VC = VISITOR CONTACT  
VV = LODGING  
VF = FOOD SERVICE  
ZZ = NO POTENTIAL USE  
OT = OTHER

(18) STRUCTURE REMOVED: \_\_\_\_\_

BU = BURNED  
DE = DEMOLISHED  
CO = COLLAPSED  
DATE: \_\_\_\_\_  
OTHER: \_\_\_\_\_

MO = MOVED  
NP = NATURAL PROCESS  
OT = OTHER

(19) APPROVED ULTIMATE TREATMENT: RH

PP = PRESERVATION  
RH = REHABILITATION  
RR = RESTORATION  
CC = RECONSTRUCTION  
NG = NEGLECT  
RN = REMOVAL  
NO = NO TRMT.

(8) APPROVAL DOCUMENT: B & E

B = GMP/DCP  
D = CRMP/RESOURCE MGT. PLAN  
E = HSR/CLR  
Z = NASO NEGLECT/REMOVAL MEMO  
DATE: \_\_\_\_\_

(23) LEVEL OF ESTIMATE: B

(21) STABILIZATION: \$ \_\_\_\_\_ DATE: \_\_\_\_\_  
(22) APPROVED TREAT.: \$ 311,000 DATE: 1/88

A = WORKING DRAWINGS  
B = PRELIMINARY PLANS/HSR  
C = SIMILAR FACILITIES

(24) ESTIMATOR: D R-REGION D=DSC A=A & E

5) VERBAL: \_\_\_\_\_







## ARCHEOLOGICAL DATA







## STATEMENT OF ARCHEOLOGICAL COMPLIANCE

Archeologist Scott Carpenter conducted an archeological reconnaissance at the Giant Forest Market in June 1986. The survey was performed in response to a plan to conduct test excavations adjacent to the market foundation to assess their conditions. Carpenter concluded "there are no archeological resources in the vicinity, and such excavations will not compromise the historic nature of the building" (memorandum June 13, 1986).

While it is recognized that the Giant Forest Village area has been generally disturbed as a result of construction activities of the 1920s and 1930s, additional archeological survey work may be warranted prior to the implementation of the site treatments proposed in this HSR. The proposed site work involves grading and removal of what is thought to be secondary fill at the rear (east side) of the market, at the southeast corner of the comfort station, and at the southwest and southeast corners of the ranger residence where a stone retaining wall has been damaged by the eroding hillside.

Archeological monitoring of construction excavations at the time they are undertaken is recommended.

Within the scope of the larger undertaking proposed by the DCP--that is, the demolition of buildings, roads, trails, and utilities throughout the Giant Forest Village--a general archeological survey is planned for summer, 1988. The results of the survey will be incorporated into the Area Study scheduled for FY 89.







HISTORICAL DATA

A SHORT HISTORY OF THREE RUSTIC STRUCTURES  
IN GIANT FOREST VILLAGE  
SEQUOIA NATIONAL PARK  
California

by  
Harlan D. Unrau







## PREFACE

This historical data section has been prepared to satisfy in part the research needs for the Giant Forest Market, District Ranger's Residence, and Comfort Station in Sequoia National Park under Package 200D. The purpose of this study is the collection, presentation, and evaluation of historical research data in detailing the architectural evolution of the three aforementioned structures.

A number of persons have assisted in the preparation of this report. Special thanks are due to Gordon Chappell, Regional Historian, Western Regional Office, for sharing his ideas on the nature of research required for the project and making available the regional office files for research purposes. My appreciation also extends to Superintendent John H. Davis, former Chief of Interpretation John Palmer, former District Interpreter now Management Assistant, William C. Tweed, and Exhibit Specialist (Preservation) Robert Haile for helping me, along with other Denver Service Center personnel, to understand the park research needs and expectations for this report and conducting us on a tour of the three buildings. I also wish to thank Curator Betty Knight for helping to orient me to the park archives and Larry Norris of the park staff for aiding my search in the park's extensive photograph collection. Craig Frazier, historical architect and team captain of the project, and John Latschar, Section Chief, Branch of Planning, Western Team, Denver Service Center, provided encouragement and handled the necessary administrative details associated with the study.

Harlan D. Unrau  
June 1986







## STATEMENT OF SIGNIFICANCE

The Giant Forest Village/Camp Kaweah Historic District in Sequoia National Park was entered in the National Register of Historic Places on May 22, 1978. It was determined that the district contains structures and landscapes having regional significance in the field of recreation and local significance in the fields of architecture, landscape architecture, and literature. This significance is based on the half century of use of these structures and sites by campers, housekeeping camp residents, and park visitors, the original and unique rustic designs displayed by many of the structures within the district, the landscape design of the two complexes, and the role of the village and camp in the development of the well known nature writer, Sally Carrighar.

Giant Forest Village is the commercial center of the historic district. The village occupies the southern side of the gentle saddle a short distance southeast of Camp Kaweah, which contains visitor accommodations. Most of the principal structures in the village are located in an informal line along the southeastern edge of Generals Highway. Three structures on the site (Giant Forest Market; District Ranger's Residence and Garage, Building No. 55; and Comfort Station, Building No. 179) have been identified as having historical and/or architectural significance. These three structures are the only ones that will remain in the Giant Forest Village/Camp Kaweah Historic District when visitor facilities and accommodations will be removed from the area to other parts of the park.

The three structures are early examples of National Park Service (NPS) efforts to develop nonintrusive and environmentally compatible park building designs. They are models of the architectural work produced by the NPS Landscape Engineering Division and its closely associated private architectural firms prior to the initiation of Emergency Conservation Work programs under the New Deal. The buildings were among the first examples of a new architectural style that has been labeled "NPS-Rustic" and were a specific response to the commitment made by the NPS in a



1918 policy statement to design environmentally sensitive structures in the parks.

The three structures derive their significance from their architectural merit, landscape placement, and compatibility with their natural settings. It should be noted, however, that both the exteriors and interiors of the three buildings have undergone various alterations and modifications (especially the Giant Forest Market) since their construction. Thus, while all three structures exhibit many of the "NPS-Rustic" characteristics of their original design, they have lost a measure of integrity (especially the Giant Forest Market) as a result of these structural changes. (See, also, Architectural Significance subsection.)

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For further data on the history and development of rustic architectural design in NPS areas, see U.S. Department of the Interior, National Park Service, Western Regional Office, Division of Cultural Resource Management, National Park Service Rustic Architecture: 1916-1942, by William C. Tweed, Laura E. Soulliere, and Henry G. Law, February 1977; U.S. Department of the Interior, National Park Service, Branch of Planning, Park Structures and Facilities, 1935; and U.S. Department of the Interior, National Park Service, Park and Recreation Structures, by Albert H. Good, 1938, Part I--Administration and Basic Service Facilities, and Part II--Recreational and Cultural Facilities.



## HISTORICAL NARRATIVE

### GIANT FOREST AREA DEVELOPMENT PRIOR TO 1926

Development of visitor accommodations within the Giant Forest area of Sequoia National Park dates from about 1914, when the first lodge was erected, although there had been considerable "tourist" travel prior to that year dating from the opening of the Colony Mill Road to Giant Forest in 1903.<sup>1</sup> In 1911 a post office had been established at Giant Forest, and in 1913 park personnel oversaw construction of the first ranger cabin in the area. In 1917 another ranger cabin, warehouse, and garage were built by the park. By the time John R. White<sup>2</sup> became park superintendent in 1920 there was considerable development in the Giant Forest area. The concessioner-operated (Kings River Parks Company, a

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1. Further information on the history of Sequoia National Park may be found in John Ise, Our National Park Policy: A Critical History (Baltimore, 1961), pp. 97-118, 204, 275ff., 281-85; John R. White and Samuel J. Pusateri, Sequoia and Kings Canyon National Parks (Stanford, 1949); Daniel J. Tobin, "A Brief History of Sequoia National Park," 1941 (typescript), Files, Technical Information Center, Denver Service Center; and U.S. Department of the Interior, National Park Service, Sequoia-Kings Canyon National Parks, History of the Parks, Maps, Evaluation of Historic Resources, Determination of Effect, DCP, by A. Berle Clemensen, September 1975.

2. John R. White served in numerous capacities with the National Park Service during his employment with the bureau from 1920 to 1947. He was superintendent of Sequoia National Park from July 14, 1920 to January 1, 1939, and returned to the superintendency of Sequoia immediately subsequent to his departure from the Regional Office in July 1941. He assumed the superintendency of Kings Canyon National Park in 1943, when the management of Sequoia and Kings was merged as a wartime economy measure. During those years he also served as acting superintendent for other NPS areas for varying periods of time. These included: General Grant National Park, July 15, 1920 - March 15, 1933; Grand Canyon National Park, December 3, 1921 - February 13, 1922; Death Valley National Monument, March 16, 1933 - April 15, 1938; Cabrillo National Monument, July 28, 1933-1935; and Channel Islands National Monument, July 1, 1945 - October 10, 1947. White also served as Regional Director, Southwest Regional Office from April 15, 1940 to August 9, 1940, and as Regional Director, Western Regional Office from



subsidiary of the Yosemite National Park Company)<sup>3</sup> facilities included three or four cabins, a small dining room, a score of tents, a photo studio, and several miscellaneous small buildings.<sup>4</sup>

The Giant Forest area received considerable attention from park personnel and NPS landscape engineers during 1920-21. In the fall of 1920 a headquarters for the landscape program had been established in Yosemite Valley with Charles P. Punchard as landscape engineer and Daniel R. Hull as his assistant. Following the death of Punchard in November 1920, his position was filled by Hull, and in February 1921 Paul P. Kressig was appointed as assistant landscape engineer. Improvement in park funding for fiscal year 1921 permitted Hull and Kressig, together with Superintendent White, to plan a number of construction projects in Sequoia.

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2. (Cont.) August 9, 1940 to July 15, 1941. U.S. Department of the Interior, National Park Service, Centennial Edition, National Park Service Officials, March 1, 1972, pp. 16, 18, 53, 64, 68, 102-03.

3. A contract for concessions in Sequoia National Park was awarded in 1920 to the King River Parks Company, a firm owned by the Yosemite National Park Company. In 1926 park concessions were taken over by the Sequoia and General Grant National Parks Company, a California-based business concern with Howard H. Hays of Riverside and George L. Mauger of Visalia as president and general manager, respectively. The name of the company was changed to the Sequoia and Kings and Kings Canyon National Parks Company in 1940. The firm continued to operate park concessions until 1966 when it was purchased by the Fred Harvey Company, which operated the park concessions under a separate company with the same name as that of the 1940-66 period. The Fred Harvey Company underwent a major corporate reorganization, and in 1971 the Sequoia park concessions were sold to Government Services, Inc. This firm, whose name was subsequently changed to Guest Services, Inc., currently has a 20-year contract to operate park concessions until 1991. Information provided by William C. Tweed, District Interpreter, Sequoia National Park, May 7, 1986.

4. Ernest A. Davison, "A Study-Plan and Schedule for Completion of Development-Removal Program, Giant Forest Area, Sequoia National Park," December 28, 1943, Park Archives, Sequoia National Park, and White to Regional Director, Region Four, September 16, 1946, File No. 900.05.1.11.1, Box No. 16918, Federal Records Center (National Archives and Records Services), San Bruno, California. At the present time, more than thirty boxes of Sequoia National Park archives from San Bruno are on loan to the park. Hereinafter, these materials will be referred to as FRC-NARS, San Bruno.



As a result of the work of Hull and Kressig a number of buildings were constructed at Giant Forest as part of the plan to develop the site as the park's summer headquarters. The buildings constructed during 1921 included a new administration building, the first in the park's thirty-one year history, quarters for the superintendent, a dance pavilion and entertainment hall, a mess hall and kitchen, several employee cabins, a forage and saddle facility, and various smaller structures.

In design concept all of the 1921 buildings in Giant Forest were patterned after the Giant Forest warehouse, one of the three aforementioned exposed redwood frame structures built in 1917. Those three buildings were probably designed by George Goodwin, a civil engineer employed by NPS Director Stephen Mather. One of the 1917 structures was pictured in the Annual Report of the Director of the National Park Service as a model for future development in the park.

The centerpiece of the Giant Forest development in 1921 was the park headquarters, a distinctly rustic structure. The exposed frame of the low, gable-roofed structure consisted of hand-split redwood posts, the space between the posts being filled with sequoia bark paneling. Shakes covered the pole-raftered roof. Both in coloring and in exterior texture the building and its ancilliary structures were designed to harmonize with their aboreal setting and were among Hull's first attempts to develop nonintrusive, environmentally sensitive park building designs.

Other improvements were made in Giant Forest during 1921. Several miles of hiking trails were constructed, making it possible for pedestrians to visit most of the well known trees without "tramping through dusty roads." The concessioner constructed a number of small cabins to house tourists at locations approved by the Park Service. These improvements led to a tremendous increase in park visitors to Giant Forest during the summer of 1921, the average daily population being 1,200 with a peak load of visitors over the Fourth of July holiday of 3,500. Winter visitation



also increased as the first winter camp and sports program was begun at Giant Forest in 1921.<sup>5</sup>

The Giant Forest area continued to experience increasing visitation and additional development during the early 1920s. In 1923, for instance, a new water system and open-air church/auditorium were constructed, and public campgrounds were extended and improved. Later in 1924-25 a sewage system and garbage incinerator were installed, and five large and five small comfort stations were constructed, the large ones having showers for both men and women as well as flush toilets. The comfort stations were designed to serve an average of 1,500 campers daily during the summer months with a peak load from 3,500 to 4,000.<sup>6</sup>

#### NEW GIANT FOREST VILLAGE AND CAMP KAWEAH DEVELOPMENT DURING THE LATE 1920s

The development of Giant Forest Village and the Camp Kaweah housekeeping cabin complex was a response to the opening of the Generals Highway through the Giant Forest portion of Sequoia National Park in 1926. With the opening of the new road it was apparent that new, larger tourist facilities and accommodations were required to serve the anticipated visitation growth. The new highway grade bisected the sites of the existing commercial village and housekeeping camp in such a manner that prevented further use or expansion of the rather small, restricted areas in question.

During the summer of 1926 new locations were designated for both the village and the camp (about one-quarter mile west of the old development

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5. Annual Report of the Director of the National Park Service, 1921, pp. 73-76, 275-76, and Tweed, Soulliere, and Law, National Park Service Rustic Architecture, pp. 26, 30-31.

6. Annual Report of the Director of the National Park Service, 1923, pp. 67-69, 183, and Annual Report of the Director of the National Park Service, 1925, pp. 94-97.



area) by NPS landscape engineers and park superintendent John R. White. By that time Hull was devoting much of his time to his private architectural practice in Los Angeles, and Thomas C. Vint, who had joined the NPS landscape staff as a draftsman in 1923, was in charge of the day-to-day operations of the landscape program.

On a gentle slope northwest of the highway construction began on a new housekeeping cabin area named "Camp Kaweah." Twenty-five bungalow housekeeping tents, an office/warehouse, and a bathhouse were erected. The new village area across the highway from Camp Kaweah was excavated and leveled at the same time. In October 1926 several buildings from the old village were moved to the new location to serve until new structures, specifically designed and adapted for the site, could be planned and erected.

Camp Kaweah was opened to park visitors at the beginning of the summer of 1927. The camp's popularity convinced its private concession operator, the Sequoia and General Grant National Parks Company, to expand its facilities and accommodations, and during the next several years additional tents and cabins were constructed with NPS landscape architectural personnel providing guidance to the concessioner.<sup>7</sup>

While Camp Kaweah grew, Giant Forest Village also took shape as the commercial center for the new complex. The buildings moved to the new village site in 1926 were not intended for permanent retention. Both the increasing visitor volume and the maturing environmental architectural standards of the National Park Service required a new set of facilities. Once the new site was chosen, Hull and Vint turned to the problem of

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7. Tweed, Soulliere, and Law, National Park Service Rustic Architecture, p. 47; National Register of Historic Places Inventory--Nomination Form, "Giant Forest Village/Camp Kaweah Historic District," May 22, 1978; and Annual Report of the Director of the National Park Service, 1928, p. 14.



planning facilities that would both provide efficient services to the rising numbers of park visitors and harmonize with their natural setting.<sup>8</sup>

## CONSTRUCTION OF GIANT FOREST MARKET, DISTRICT RANGER'S RESIDENCE, AND COMFORT STATION

### Giant Forest Market

Because the two major structures required for the new Giant Forest Village--Giant Forest Market and Lindley Eddy photographic studio--were to be privately owned, Hull and Vint could not design them. Hull was obviously influential, however, in the choice of architects for the two buildings. Between 1923 and 1927 the NPS Landscape Engineering Division, with Hull in charge, was located in Los Angeles, California, where Hull shared offices with the architectural firm of Gilbert Stanley Underwood and Company.

Gilbert Stanley Underwood, a native of New York State, was employed as an architect for some fifteen years prior to 1923, designing hotels, banks, and office structures. In 1923 he received a Master of Architecture degree from Harvard University and opened an office in Los Angeles, California. Among his first architectural commissions were preliminary sketches for the new Yosemite administration and post office buildings.

That same year Underwood became a consulting architect with the Union Pacific Railroad which had recently organized the Utah Park Company to operate its concession rights in Grand Canyon and Zion national parks and Bryce Canyon National Monument. During the spring of 1923 NPS landscape architect Daniel R. Hull met with an architectural representative of the railroad (probably Underwood) to discuss development plans at

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8. National Register of Historic Places Inventory--Nomination Form, "Giant Forest Village/Camp Kaweah Historic District."



Zion. As a result of these planning meetings for the construction of the Zion Inn, Hull and Underwood became friends, a relationship based in part on their mutual enthusiasm for the design of buildings that harmonized with their natural settings.

Late in 1923 Hull received permission from NPS Director Mather to move the office of the Landscape Division from Yosemite Valley to Los Angeles, where he could work closely with Underwood. Hull and his small staff soon were subletting a portion of the Underwood and Company offices at 730 South Los Angeles Street.

According to Tweed, Soulliere, and Law in their National Park Service Rustic Architecture, Underwood's adoption of rustic concepts to large structures and modern materials essentially completed the development of an architectural style specifically adapted to the natural settings of the national parks. Examples of his commissions in the national parks during the 1920s were the Zion Inn (1925), the Ahwahnee Hotel in Yosemite (1927), and the Grand Canyon Lodge at Bright Angel Point (1928). In addition to his commissions to design the Giant Forest Market and the Lindley Eddy studio at Sequoia during the late 1920s, he also prepared plans for a lodge complex in General Grant National Park, much of which was never built.<sup>9</sup>

Among other results, the Hull-Underwood relationship produced the Ahwahnee Hotel in Yosemite and lodges in Zion and Grand Canyon national parks. The Underwood Company was thus commissioned by the concessioner to design the Giant Forest Market and Lindley Eddy studio at Sequoia.<sup>10</sup>

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9. Tweed, Soulliere, and Law, National Park Service Rustic Architecture, pp. 41-47, and William C. Tweed, "Parkitecture: A History of Rustic Building Design in the National Park System, 1916-1942," n.c. pp. 39-40, 44-48 (draft typewritten mss.). [Files, Technical Information Center, Denver Service Center.]

10. National Register of Historic Places Inventory--Nomination Form, "Giant Forest Village/Camp Kaweah Historic District."



The plans for the Giant Forest Market were submitted by Underwood to the National Park Service for approval on May 29, 1928. (Historic plans are included in the chronological summary subsection, below.) The plans were recommended for approval by landscape architect Thomas C. Vint and park superintendent John R. White on August 2 and were approved by Acting NPS Director Arno B. Cammerer on August 11. As designed by Underwood the market was a long, low exposed-frame structure (24' x 120') with a highly symmetrical facade. Two gable-roofed wings anchored the ends of its long, low hall and suggested an "I" floor plan. Because it was a relatively large building standing in the center of a large, artificial opening in the forest, the market required certain adaptations to the site. Balance between the wall surfaces and the massive scale of the surrounding trees was achieved by the use of heavy log exposed framing. Although Underwood originally sketched the market with half round exposed log members, the decision was made to go forward with more economical square timber. Underwood's original sketches also provided for a pergola along the front of the market, but this too was eliminated during construction. The almost exclusive use of wood in the building's exterior surfaces was a major facet of its environmentally sensitive design, as were the wood shingle roof, herringbone patterned doors, and large windows composed of numerous small panes. The green and brown color scheme was also a response to the building's aboreal setting. The structure was thus not only designed to be pleasing to the eye but was also to be an answer to the problem of erecting a relatively large structure in a natural setting without allowing competition to develop between the setting and the building.<sup>11</sup>

Construction of the Giant Forest Market was begun in August 1928 by the Sequoia and General Grant National Parks Company.<sup>12</sup> Initial building

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11. National Register of Historic Places Inventory--Nomination Form, "Giant Forest Village/Camp Kaweah Historic District."

12. No documentation could be found relative to the contract, specifications, and as-built drawings for the market. In the early 1970s the park concessionaire disposed of some 45 years of records pertaining to park concession operations. It is conceivable that construction documents for the market were among those records.



operations proceeded quickly. On October 4, 1928, Superintendent White reported that the "rough construction was finished at the end of the month, but considerable work will be necessary in the spring before the store will be ready for use."<sup>13</sup>

There is little available documentation relative to the progress of construction on the market. Superintendent White reported on June 3, 1929, that the "new general store at the Village Site was practically completed by the end of the month [May] and operating."<sup>14</sup> On August 3 the Fresno Morning Republican contained an article describing developments at Giant Forest Village. Among other things, the article stated that the "roof of the new store building is being stained a dark green which blends in with the surrounding woods." This was "a great improvement over the glaring new lumber which had been left in its natural color."<sup>15</sup>

During the late summer and early fall of 1929 Superintendent White briefly noted several developments pertaining to the market. On September 5 he reported that the "new village road and side walls in front of the store building was finished and a log curb installed." One month later (on October 5) White observed that "a crew of carpenters has been busy preparing cabins and remodeling the store building to care for winter guests."<sup>16</sup>

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13. Superintendent's Monthly Reports, September 5, 1928, p. 4, and October 4, 1928, p. 5, Park Archives, Sequoia National Park. Also see Superintendent's Annual Report, 1928, n.p., Park Archives, Sequoia National Park.

14. Superintendent's Monthly Report, June 3, 1929, p. 6, and Superintendent's Annual Report, 1929, n.p.

15. Fresno Morning Republican, August 3, 1929, Park Historical Files, Park Archives, Sequoia National Park.

16. Superintendent's Monthly Reports, September 5, 1929, p. 4, and October 5, 1929, p. 5.



## District Ranger's Residence

More than half a dozen smaller structures were built in Giant Forest Village during the late 1920s and early 1930s. Two of these, the District Ranger's Residence and the Comfort Station, were National Park Service structures that have been determined to possess architectural/historical significance and hence are on the National Register of Historic Places.

The first sketches and plans for the District Ranger's Residence were prepared in March 1930 by Merel S. Sager, an NPS landscape architect who had been hired by Vint during the summer of 1928.<sup>17</sup> The sketches (copies of which could not be found) incorporated ideas that had been provided by Superintendent White. The plans provided for an office that could be visited by the public without interfering with the private living quarters. The exterior of the residence was to be composed of half log slabs with rough stone corners since such materials would be "in quiet harmony with the Giant Forest surroundings." A number of designs were attempted using a steep-pitched roof but were discarded in favor of a lower-pitched roof "built sufficiently strong to carry the snow load." The plans did not provide for a heating system other than the fireplace, because a "separate heating plant would require excavation for a basement." The excavation "would likely be in rock," thus making the heating plant "quite a financial item." Sager suggested that heat be provided by covering the fireplace opening in winter and setting up a

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17. Tweed, Soulliere, and Law, National Park Service Rustic Architecture, pp. 49-50. Sager had first worked for the NPS as a summer ranger in Yellowstone in 1922-23 and in Glacier in 1925-26. After receiving his Master's degree in landscape architecture from Harvard in 1928, he received a temporary job with the Park Service. After helping Vint write the first civil service examination for landscape architects, Sager passed the test and earned a permanent position. For the next several years he worked mainly in the western parks, especially Sequoia, Crater Lake, and Lassen Volcanic. The majority of his work was in general landscaping, roads, area plans, and construction supervision. During his NPS career Sager spent twenty years in Washington, D.C., ten as chief of park planning in the National Capital Parks and ten as chief landscape architect.



stove. A garage and woodshed were to be built adjacent to the residence.<sup>18</sup>

Superintendent White commented favorably on the plans on April 29, 1930, noting that he thought "the cabin arrangement, and particularly the kitchen, is very good indeed." The kitchen's central location, together with the fireplace, would "keep the house warm." He observed that the garage and woodshed need not be of the "same stout construction as the house."<sup>19</sup>

Apparently funds for construction did not become available until the spring of 1931. The sum of \$4,550 was allocated for the residence, but cost estimates for the structure based on the original plans were considerably in excess of that amount. To reduce costs it was determined to reduce floor space and modify the exterior design. The two bedrooms were retained, but the office room was eliminated. It was also determined to bring "the stonework just to floor level instead of to the window sash." Three windows would be placed in the south wall of the living room instead of two as originally planned.<sup>20</sup>

The plans (copies of which may be seen in the chronological summary) were approved by Acting NPS Director Cammerer on June 1, 1931.<sup>21</sup> The four-room residence was located on a small densely forested hill overlooking Giant Forest Village. After consulting with Superintendent White and the NPS landscape architectural staff then located in San Francisco, Sager chose a wood frame design for the structure that would

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18. Sager to White, March 25, 1930, File No. 620-63, Box 429148, FRC-NARS, San Bruno.

19. White to General Foreman, April 29, 1930, File No. 620-63, Box 429148, FRC-NARS, San Bruno.

20. Vint to White, May 1, 1931, File No. 620-63, Box 429148, FRC-NARS, San Bruno.

21. A copy of the specifications for the structure, dated May 27, 1931, may be seen in Appendix D.



be compatible with the aboreal setting and the concession structures in the vicinity. The dominant structural feature was a framework of exposed ten-inch square timbers that formed both the vertical and capping horizontal members of the walls. These exceptionally heavy beams gave the building a proportional relationship to the surrounding forest. The foundation and chimney were of granite boulder masonry and thus continued the theme of massiveness. The house consisted mainly of commercially available materials. The area between the vertical wall posts, for example, was filled with unplanned lap siding, while the gable ends were enclosed with board and batten.<sup>22</sup>

The work of clearing the site and hauling construction materials for the District Ranger's Residence began on June 25, 1931.<sup>23</sup> By August 5 Superintendent White was able to report that excavation for the residence was finished, the foundation was 75 percent completed, all building materials were on the ground, and it was anticipated that the structure would be ready for occupancy by September 15.<sup>24</sup> In both his monthly reports for September 4 and November 4 White stated that the structure was completed.<sup>25</sup>

### Comfort Station

During the summer of 1932 a comfort station was constructed in Giant Forest Village some twenty yards from the market. Earlier two comfort stations (one large and one small) had been planned to replace the

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22. Tweed, Soulliere, and Law, National Park Service Rustic Architecture, pp. 57,60. Although there is no documentation relative to construction of the garage, it is likely that it was built concurrently with the residence.

23. Superintendent's Monthly Report, July 10, 1931, p. 4.

24. Ibid., August 5, 1931, p. 6.

25. Ibid., September 4, 1931, p. 4, and November 4, 1931, p. 3. Also see Superintendent's Annual Report, 1931, n.p.



existing small and inadequate comfort station. After planning meetings attended by NPS landscape architects and Superintendent White in June 1932 it was determined to combine the funds of the two proposed facilities and construct one large, centrally located comfort station (\$2,450) to serve the needs of the ever-increasing number of visitors to the Giant Forest area.<sup>26</sup>

The plans for the comfort station were prepared by Sager and approved by Acting NPS Director Arthur E. Demaray on July 21, 1932. The plans for the structure were similar to those of a comfort station that had been built in Mariposa Grove in Yosemite in 1931. The structure was designed to harmonize with the Giant Forest setting as well as other NPS and concessioner structures in the vicinity. It was to be a wooden, exposed-frame structure (13' x 23') with the 10 x 10-inch (actually used 8 x 8's) vertical and diagonal beams of the frame exposed, thus giving the building a solid massiveness proportional to its surroundings. Five wooden brackets supported the eaves on each end of the gable roof, and the use of natural textures was emphasized by a concrete foundation with stone veneer. The roof was covered with shingles.<sup>27</sup>

There is little documentation concerning the progress of construction on the comfort station. According to Superintendent White's annual report for 1932 the structure was completed that summer.<sup>28</sup>

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26. Correspondence relating to this decision may be found in File No. 620-75, Box 429148, FRC-NARS, San Bruno.

27. Tweed, Soulliere, and Law, National Park Service Rustic Architecture, pp. 63, 66.

28. Superintendent's Annual Report, 1932, n.p.



## DEVELOPMENT AND UTILIZATION OF GIANT FOREST AREA:

### 1930S-PRESENT

By 1933 both Giant Forest Village and Camp Kaweah were essentially completed.<sup>29</sup> Both NPS crews and Civilian Conservation Corps personnel did extensive grading and landscaping in the area during the early 1930s. This work included the layout of parking areas, trails, and roadways, the construction of granite curbing, and the planting of trees.<sup>30</sup>

Expansion of visitor facilities in the Giant Forest area continued during the 1930s. In 1935 work began on a major expansion of Camp Kaweah, but the new cabin area, "Lower Kaweah," was separated from the original site by topographic barriers. During the later 1930s, the remaining guest tents in "Upper Kaweah" were converted to rustic cabins.

Thus the Giant Forest area began to gain regional significance as a recreation center in the 1930s. By 1938 the two sections of Camp Kaweah contained over 140 guest units, and these cabins maintained a high occupancy rate throughout the summer months with many of the camp residents remaining for up to a month or more. The Giant Forest Market, as well as the other visitor services in the village, provided necessary supplies for the housekeeping residents and the occupants of the nearby Giant Forest campgrounds.

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29. Three maps of the Giant Forest area, dated March 1930, November 1932 and October 1934, may be seen on the following pages. For a description of the opportunities afforded visitors to Giant Forest in the 1930s see U.S. Department of the Interior, National Park Service, Circular of General Information Regarding Sequoia and General Grant National Parks, 1930, in "Circulars of General Information, National Parks, 1930," Sequoia National Park Library, and U.S. Department of the Interior, National Park Service, Sequoia [California] National Park, 1937, in "Circulars of General Information, The National Parks, 1937," Rocky Mountain Regional Office (NPS) Library.

30. Photographs in "Sequoia's Developing Years: A Photographic Album," which may be found in the Sequoia National Park Library, show that extensive landscaping work in the Giant Forest area was in progress as early as the fall of 1931.



One long-term housekeeping guest of special significance was Sally Carrighar, who spent a summer in the early 1940s in a cabin overlooking Beetle Rock near the west end of "Upper Kaweah." As a result of her stay, she published the first of her acclaimed nature books, One Day on Beetle Rock. The success of this book led to additional publishing efforts, including One Day at Teton Marsh and Wild Heritage. These books, together with her autobiography, have earned her a permanent place in the pantheon of American nature writers.

Little development and few changes occurred in the Giant Forest area during the 1940s and 1950s. In the early 1960s, however, Giant Forest Village and Camp Kaweah again felt the impact of change. One-half of the "Upper Kaweah" housekeeping camp was replaced by modern motel units, and the remaining cabins were electrified. Among other changes the 1933 gasoline station and the post office in the village area were removed, and major structural changes were carried out on the Eddy Studio. Only the Giant Forest Market, District Ranger's Residence, and Comfort Station escaped this period of change relatively untouched.

Changes also occurred in the visitor use patterns affecting Camp Kaweah and Giant Forest Village. By 1972 the last of the Giant Forest campgrounds had been closed as a part of the long-term NPS effort to reduce intensive visitor impact on the area's natural resources. This resulted in decreased visitor patronage in the village. During the same period the demand for housekeeping accommodations dropped, a result of America's infatuation with recreational vehicles and house trailers. By the mid-1970s, however, these accommodations received a resurgence of interest, and the Giant Forest Lodge added new motel rooms during the early 1980s.<sup>31</sup>

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31. National Register of Historic Places Inventory--Nomination Form, "Giant Forest Village/Camp Kaweah Historic District."



Figure 9. Map--Giant Forest Area, March 1930 (NP/S-4714, part of sheet)







Figure 10. Map--Giant Forest Village Area, November 1932 (NPS/S-4961)







Figure 11. Map--Central Area of Giant Forest, October 1934  
(NPS/SEQ-5100)







UTILIZATION OF AND ALTERATIONS TO GIANT FOREST MARKET,  
DISTRICT RANGER'S RESIDENCE, AND COMFORT STATION:  
1930S-PRESENT

The purpose of this chapter is to present the available documentation on the utilization and modification of the Giant Forest Market, District Ranger's Residence, and Comfort Station. Little data on these subjects is available other than scattered photographs and several floor plan sketches. Changes in the utilization of various portions of the market, however, lead to speculation that there have been numerous modifications to its interior that are not noted in the park records.

Giant Forest Market

After its opening in 1929 the Giant Forest Market served as an all-purpose grocery and meat store for park visitors. In July 1931, for instance, an article in the Los Angeles Evening Herald stated that the market was "a general store and meat market with a fresh supply of staple groceries, fresh breads and meats, vegetables, ice cream, newspapers, magazines and other necessities."<sup>32</sup>

As early as December 1929 the Sequoia and General Grant National Parks Company began making plans for enlargement and alteration of the market. The alterations and improvements that were completed by the early summer of 1930 included reconstruction and alterations to the south wing of the structure to provide a "winter lounge room with large fireplace" and "finishing of the interior of the entire Store building." The alterations to the south wing included the addition of a central door and chimney and modifications of the south and main west facades to their

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32. Los Angeles Evening Herald, July 1931, Park Historical Files, Park Archives, Sequoia National Park. By the late 1940s the market carried "all lines of groceries, suitable clothing, and other merchandise." White and Pusateri, Sequoia and Kings Canyon National Parks, p. 16.



present configuration. Proposals to build a new commissary and storehouse in the rear of the market "to more satisfactorily care for supplies and equipment" were deferred for the present.<sup>33</sup>

During the early 1930s the Sequoia and Kings Canyon National Parks Company "rearranged" the market each fall to accommodate the growing number of winter visitors to the Giant Forest area. In October 1932, for instance, Superintendent White reported that the "winter store has been rearranged and well stocked and shows a big improvement over last year."<sup>34</sup>

After further discussions between concessioner and NPS personnel tentative plans were approved in the fall of 1930 "to excavate about 24' back of the building for a distance of 120'." Some 700 cubic yards of earth would be removed to provide a level area on which to construct an extension to the market. The excavation project, however, was estimated to cost \$750, and the Sequoia and Kings Canyon National Parks Company determined that the expense was too much to incur at that time.<sup>35</sup>

During the years 1933-35 several improvements were made to the market building. These included the installation of electrical power and construction of the first shed addition in the rear. Further plans for construction of an extension to the market were discussed in May 1937. That month Superintendent White noted in a letter to Howard H. Hays, president of the Sequoia and Kings Canyon National Parks Company, that "Mr [Harold] Fowler stated he thought of adding something to the back of the store building." White indicated his concern that such an addition

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33. Mauger to Hays, December 18, 1929, and Hays to Albright, March 7, 1930, File No. 900.05.1.11.1, Box 16918, FRC-NARS, San Bruno.

34. Superintendent's Monthly Report, October 4, 1932, p. 6.

35. Vint to White, March 9, 1931; White to Sager, April 6, 1931; White to Mauger, April 7, 11, 1931; Mauger to White, April 9, 1931; File No. 900.05.1.11.1, Box 16918, FRC-NARS, San Bruno.



"would be bad from a snow removal standpoint and would make a gloomy place for employees."<sup>36</sup> Despite the objections of Superintendent White the concession company went ahead with plans for the addition of a storage room to the market during the fall and winter of 1937-38.<sup>37</sup>

The plans (a copy of which may been in the Chronological Summary) for the storage room addition to the rear of the market were prepared by George L. Mauger, general manager of the concession company, on November 29, 1937. Construction of the second shed addition in the rear of the market was carried out during the fall and winter of 1937-38. A north wing addition was also constructed, and several other improvements were probably made at this time, including reconfiguration of the north elevation of the north wing, changes to the west elevation of the south wing, and installation of gas heaters. On November 4 of that year Superintendent White reported that enlargement and "reconstruction" of the village store was the company's major building job of the month.<sup>38</sup> The following month, on December 8, White observed that the company had a large crew at work and was making good progress on reconditioning the store.<sup>39</sup>

A portion of the Giant Forest Market was converted for use as a lounge room and lecture hall to accommodate visitors during the winter of

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36. White to Hays, May 10, 1937, File No. 900.05.1.11.1, Box 16918, FRC-NARS, San Bruno.

37. White to Mauger, October 2, 1937, and February 11, 1938; Mauger to Tobin, October 24, 1937; White to Regional Director, Region IV, November 6, 1937; Davidson to Regional Director, Region 4, November 23, 1937; Kittredge to White, November 27, 1937; and Wirth to Superintendent, Sequoia National Park, January 26, 1938; File No. 900.05.1.11.1, Box 16918, FRC-NARS, San Bruno.

38. Superintendent's Monthly Report, November 4, 1938, p. 5.

39. Superintendent's Monthly Report, December 8, 1938. In July 1939 the concessioner opened a second market in Sequoia at Lodgepole, thus reducing considerable congestion at the Giant Forest Market. Ibid., July 11, 1939, p. 3.



1940-41. Among other things the room was used by the park naturalist for Saturday evening lectures. For reasons of economy, the concession company chose not to fit up such a room for the winter of 1941-42, thus causing the Saturday evening lectures to be moved to the coffee shop. However, Superintendent White reported on March 6, 1942, that the "park operator has reopened the Winter Recreation Hall at the Giant Forest Winter Camp for the Saturday evening lectures, which are followed by dancing." The room in the market was a "decided improvement" over the coffee shop according to White.<sup>40</sup>

During the summer of 1941 the Sequoia and Kings Canyon National Parks Company prepared plans for additions to the north and south ends of the market. According to plans submitted by General Manager Mauger on August 29, 1941, each addition was to be 20 x 30 feet with wood floors, rustic walls and ceilings on the interior, and heavy timber walls and shingle roofs on the exterior. A brick flue, with stone veneer above the roof line, was to be located between the existing structure and each addition. The north addition was designed for expansion of market storage space, while the south addition was to house the village post office. The proposed post office included space for a lobby/desk area and an office. An excavation of three to four feet would be necessary for construction of the post office. The north addition meant that the existing canvas-topped curio store and old shake cabin adjacent to the market would be removed and their functions transferred to the coffee shop.<sup>41</sup>

Specifications for the market additions were submitted to the National Park Service by Mauger on December 3, 1941. To cause as little damage as possible to the roots of the sequoia trees the foundations for the

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40. Superintendent's Monthly Reports, January 6, 1942, p. 2, and March 6, 1942, p. 2.

41. "Floor Plan for Additions to Giant Forest Village Store Addition," Submitted by George L. Mauger, August 29, 1941, Park Drawings Files, Park Archives, Sequoia National Park.



additions were to be set on concrete piers at intervals instead of using a continuous concrete wall and footing. The ceiling and roof rafters, roof frame members, top plates, and roof braces were to be of No. 1 common Douglas fir, while the studding, wall braces, and posts were to be of No. 2 common Douglas fir. The roof sheathing was to be of No. 3 common Douglas fir, and the siding was to be 1 x 8 shiplap stained brown in conformity with the exterior walls of the existing structure. The interior walls and ceilings were to be lined with 1 x 10 V-rustic pine shiplap smooth face. The roofs of the additions were to be of No. 1 grade shingles 5/16 to 2/16-inch, and the roof of the existing structure was to be redone to correspond with that of the additions. The roofs were to be stained dark green, while the exterior walls of the additions were to be stained a dark reddish brown, a color standardized some years before from Sherwin-Williams B-46 tinted with Venetian red ground in oil.

The brick flues were to be lined with terracotta flue lining and kept three inches from any woodwork by metal lath and plaster. Cast iron cleanout doors were to be installed at the bottom of the flues, which were to be faced with rock outside the building above the roof lines and supported on corbels of sufficient size below the roof lines. The flues were to have concrete bases in the ground.

The plumbing waste lines were to be run in cast iron pipe with oakum and leaded joints and laid with proper fall. Water lines were to be of standard weight galvanized iron pipe. All fixtures were to be made by the Sanitary Manufacturing Company or by reputable hotel-kitchen equipment companies.<sup>42</sup>

The proposed market additions, which were part of a larger package of planned improvements for Giant Forest Village, were never carried out. The reasons for this were twofold: American involvement in World War II after the Japanese attack on Pearl Harbor on December 7, 1941, and the

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42. Mauger to Tobin, December 3, 1941, and enclosure, File No. 900.05.1.11.1, Box 16918, FRC-NARS, San Bruno.



development of a Park Service policy, as enunciated by Superintendent White, to discourage further development in and promote removal of visitor facilities from the Giant Forest area.<sup>43</sup>

In July 1946 an electric refrigeration system ("walk-in coolers") was installed in the market after the U.S. Public Health Service condemned the "existing ice boxes as a menace to health and sanitation." Since the small generating plant at the Giant Forest service station was too small to provide the required electrical output a new building and electric generating plant were built in the village to not only serve the needs of the market but other buildings as well.<sup>44</sup>

In 1954 a new "ice house" was added to the market for the storage of ice and fuel for sale. The ice house also provided space for refrigeration equipment. The "ice house" cost \$2,975.<sup>45</sup>

As part of an inventory on concession buildings in the park the Giant Forest Market was examined by NPS personnel some time between 1966 and 1971. A copy of the commercial building record form that was prepared for the market is included in the Chronological Summary.

Various changes were made to the Giant Forest Market during the 1970s and early 1980s. These alterations included:

- 1974 - Lean-to barber shop removed from north wing of building
- 1975 - Bar opened in south wing of building with entrance to left of bar (pegboard had covered windows and fireplace in south wing prior to 1975)
- 1975 - Realignment of interior walls
- 1975 - Metal roofing installed

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43. Fowler to Superintendent, January 2, 1942, File No. 900.05.1.11.1, Box 16918, FRC-NARS, San Bruno.

44. White to Regional Director, Region Four, June 15, 1945, File No. 900.05.1.11.1, Box 16918, FRC-NARS, San Bruno.

45. Mauger to Scoyen, December 31, 1954, File No. C58, FRC-NARS, San Bruno.



- 1975-76 - Installation of new electrical wiring system
- 1978 - Installation of fluorescent lights
- 1981-82 - Installation of new freezer and ramp behind market  
(freezer was placed on foundation of former storage shed)
- 1983 - Bar area remodeled; original outside doors in south wing  
reopened; bar counter top of sequoia slab moved from west  
wall to center of room
- 1984 - Addition of front porch to north wing<sup>46</sup>

### District Ranger's Residence

The District Ranger's Residence and Garage served its intended purpose throughout the 1930s and early 1940s. When John R. White returned to Sequoia as superintendent on October 1, 1943, after nearly five years in other NPS endeavors, he moved into the house. He lived there until his retirement on October 10, 1947, after which the structure reverted to use as a residence by the Giant Forest district ranger.<sup>47</sup>

An inventory of quarters in Sequoia National Park was undertaken in 1947. On January 7 the District Ranger's Residence (Quarters No. 55) was examined. The inventory included a photograph and floor plan (copies of which may be seen in the Chronological Summary) and a written description of the structure. The written description read:

One story frame building. Studded wall type construction. Rustic board exterior and plastered wall interior finish. Double floors throughout building with insulation paper between. Shingle roof. Constructed on cement and stone foundation in 1931. General condition good. Interior decorations good.

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46. Information supplied by Robert Seney and Greg Leavey, employees of Guest Services, Inc., May 8, 1986. Seney and Leavey also provided some approximate dates for earlier alterations to the structure: 1950s--overhead racking in back storage area; early 1960s--gas lamps converted to electric lights; and 1960s and 1970s--cages installed in back storage area. Prior to 1967 the area behind the present bar was utilized as a butcher station and produce storage area.

47. Clemensen, Sequoia-Kings Canyon National Parks, History of the Parks, Maps, Evaluation of Historic Resources, Determination of Effect, DCP, September 1975, p. 19.



Four rooms and bath, consisting of kitchen, living room and two bedrooms. Modern plumbing fixtures. Adequate closet space. Screened-in back porch. Electric lights. Heated from oil burning circulating heater located in hallway and fireplace in living room. Running water from central water system. Domestic water heated by wood burning cook range. Detached one car garage, unheated with dirt floor. Quarters furnished with wood burning cooking range, 9 cu. ft. Flamo gas operated refrigerator. Gas furnished by Government. Venetian blinds and window shades, no curtain rods, garbage container. Grounds not landscaped.<sup>48</sup>

Plans were drawn by park personnel to build a small enclosed service area and an open porch addition at the rear entrance of the residence in September 1953. The addition would provide space for installation of a laundry tray and washing machine. The service area was to house three liquified petroleum gas cylinders in addition to a refrigerator.<sup>49</sup>

The plans were rejected by Region Four personnel, because liquified petroleum gas containers could not be installed inside buildings. Since the cylinders needed to be located in a cabinet at the low side of the building and at least five feet from any structural opening below the outlet of the regulator, regional architects proposed that the laundry tray and washing machine be located in the service porch and the refrigerator remain in the existing rear entry.<sup>50</sup>

After further discussions between park and regional personnel it was determined to add a cabinet for the liquified petroleum containers to the gable end of the garage. On September 25 Assistant Regional Director

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48. Quarters Inventory, Quarters No. 55, January 7, 1947, Park Historical Files, Park Archives, Sequoia National Park.

49. Superintendent, Sequoia and Kings Canyon to Regional Director, Region Four, September 2, 1953, File No. 620-63, Box 429148, FRC-NARS, San Bruno.

50. Acting Assistant Regional Director, Region Four to Superintendent, Sequoia-Kings Canyon, September 4, 1953, File No. 620-63, Box 429148, FRC-NARS, San Bruno.



Sanford Hill directed that work on the cabinet, as well as the porch addition, be subject to the following considerations:

. . . We believe that the existing porch, which is proposed as laundry, is too small for the laundry tray and washing machine. More space is needed around the laundry tray for proper use of a standard washing machine. We again suggest that the existing porch be used for the location of the refrigerator and that the new service porch, which is to be added, be used as laundry. The laundry tray should have space, at least at one end, and preferably both, for the proper use of the washing machine. It is also suggested that additional windows be provided at the service porch,<sup>51</sup> otherwise, the light in the existing porch will be inadequate.

A park building inventory conducted during the late 1960s or early 1970s provides data on the residence. The building data form indicates that the original cost of the structure was \$2,500 but that its value at the time of the inventory was estimated to be \$5,000. The one-story structure had seven rooms (a copy of the floor plans may be seen in the Chronological Summary) with a square footage of 896. The frame residence rested on a concrete foundation and had exterior rustic siding, interior plaster walls, pine floors, and a cedar shingle roof. The interior walls were covered with oil paint and casin, the floors with varnish, and the ceilings with stain and varnish. The residence had water, electricity, sewer, and telephone connections. Mechanical equipment included complete bathroom plumbing, a circulating heating system using oil for heating, an electric range and refrigerator, and an electric hot water heater. Fire protection was provided by a hydrant (25 feet from

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51. Superintendent, Sequoia and Kings Canyon to Regional Director, Region Four, September 16, 1953, and Assistant Regional Director, Region Four to Superintendent, Sequoia-Kings Canyon N.P., September 25, 1953, File No. 620-63, Box 429148, FRC-NARS, San Bruno. It is likely that the cement patio area at the rear of the residence was constructed at this time.



the residence) having a 3/4-inch hose connection. The structural and mechanical conditions of the structure were rated "fair."<sup>52</sup>

A "Classified Structure Field Inventory Report" form was completed for the District Ranger's Residence on October 21, 1975. The physical description of the structure, as prepared by Sequoia District Interpreter William Tweed and Western Region Historical Architect Robert Cox, read:

The old Giant Forest District Ranger's Residence is a one story, wooden frame structure. The major framing elements are exposed and form wall panels finished with horizontal lap siding. A shingle roof with metal snow-flashing at the eaves caps the structure which stands on a foundation of undressed granite and concrete. The house contains two bedrooms, a kitchen, a living room, a service room, and a bath. The interior walls are plastered, and the house has a double pine floor. A large stone fireplace and chimney stand at the west end of the living room. Windows are wood casement type. A covered porch shades the front door. A temporary snowshed extends from the back door to an adjacent garage building. A patio and outdoor fire pit made of granite are adjacent to the rear of the house. The structure is painted brown with green trim. It is in good condition and has no requirements beyond routine maintenance. . . .<sup>53</sup>

In 1983 the interior of the residence was renovated. New electrical and heating systems were installed, and the walls were replastered. No changes, however, were made to the floor plan of the structure.<sup>54</sup>

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52. Individual Building Data, "Residence, Bldg. No. 55," ca. late 1960s-early 1970s, Building Inventory--Giant Forest/Lodgepole, December 1, 1974, Files, Technical Information Center, Denver Service Center. A comparison of the 1947 floor plan of the residence with this one indicates that no interior room-space changes were made to the structure during this period.

53. Classified Structure Field Inventory Report, "Old Giant Forest District Ranger's Residence, Structure No. 55," October 21, 1975, Park Historical Files, Park Archives, Sequoia National Park. The date of construction of the temporary snowshed is not known. According to park personnel, it has been there for at least fifteen years.

54. Information provided to author by Superintendent John H. Davis, John Palmer, Chief of Interpretation, William C. Tweed, District Interpreter, and Robert Haile, Exhibits/Maintenance Specialist, Sequoia National Park, May 5, 1986.



"Individual Building Data" forms for the District Ranger's Residence and adjacent garage were prepared by park personnel in October 1985. The data and accompanying floor plans may be seen in the Chronological Summary.

### Comfort Station

A park building inventory conducted in early 1951 provides some data on the comfort station. While the original cost of the structure was \$2,173.59, its value as of February 19, 1951, was determined to be \$4,350. The inventory form indicated that the comfort station was one-story and had ten partitioned spaces with 299 square feet of floor space and 3,289 cubic feet of room area. The frame structure had "split and shakes" (sic) exterior walls, an interior Y-ceiling, a concrete floor, and a split and shake roof. The interior walls and ceilings were covered with oil paint. The building was connected to the Giant Forest water and sewer systems and was heated by a gas radiant system using propane gas. The structural and mechanical conditions of the building were rated "fair." A fire hydrant with a 2½-inch size hose connection was located 190 feet from the structure.<sup>55</sup>

A "Classified Structure Field Inventory Report" was prepared for the Comfort Station on October 21, 1975. The physical description of the structure, as prepared by park personnel William Tweed and Robert Cox, read:

The Giant Forest Village Comfort Station is a one story, exterior frame, wood structure built by the National Park Service in 1933. Structural members of the frame are 6x8 timbers. These are infilled with shakes as are the gables. The roof is finished with cut shingles. The roof beam ends are supported by heavy wooden brackets. The rafters are 4x6

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55. Building Inventory, "Comfort Station, No. 179," February 19, 1951, Building Inventory--Giant Forest/Lodgepole, December 1, 1974, Files, Technical Information Center, Denver Service Center. A copy of the building's floor plan may be seen in the Chronological Summary.



timbers. Both interior rooms are divided into toilet stalls. The structure has a concrete floor slab and a concrete foundation with undressed granite. Each side is ventilated with several wood hopper windows. The structure has water, sewer, and electrical connections. It is in excellent condition and requires only routine maintenance. The structure is of architectural interest.<sup>56</sup>

An "Individual Building Data" form for the Comfort Station was prepared by park personnel in September 1985. Copies of the form and accompanying floor plan may be seen in the Chronological Summary. Comparison of the floor plans for the Comfort Station prepared in 1951 with those of 1985 indicate that the women's portion remained largely intact. The men's section shows several changes (possibly carried out in 1964), however, including the reduction of stall toilets from four to two and realignment of sink and wall urinals.

#### NATIONAL PARK SERVICE PLANNING EFFORTS FOR GIANT FOREST AREA: 1977-PRESENT

During the late 1970s and early 1980s the National Park Service undertook an extensive planning effort for the eventual removal of employee housing, overnight lodging and eating facilities, and other visitor services from Giant Forest to Clover Creek in Sequoia. When major development is moved out of Giant Forest, it will be improved for day use activities as a prime center for enjoyment of the sequoias. The result of the planning effort will be the retention of only three buildings in Giant Forest: Giant Forest Market, District Ranger's Residence, and Comfort Station.<sup>57</sup>

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56. Classified Structure Field Inventory Report, "Giant Forest Village Comfort Station, Structure No. 179," October 21, 1975, Park Historical Files, Park Archives, Sequoia National Park.

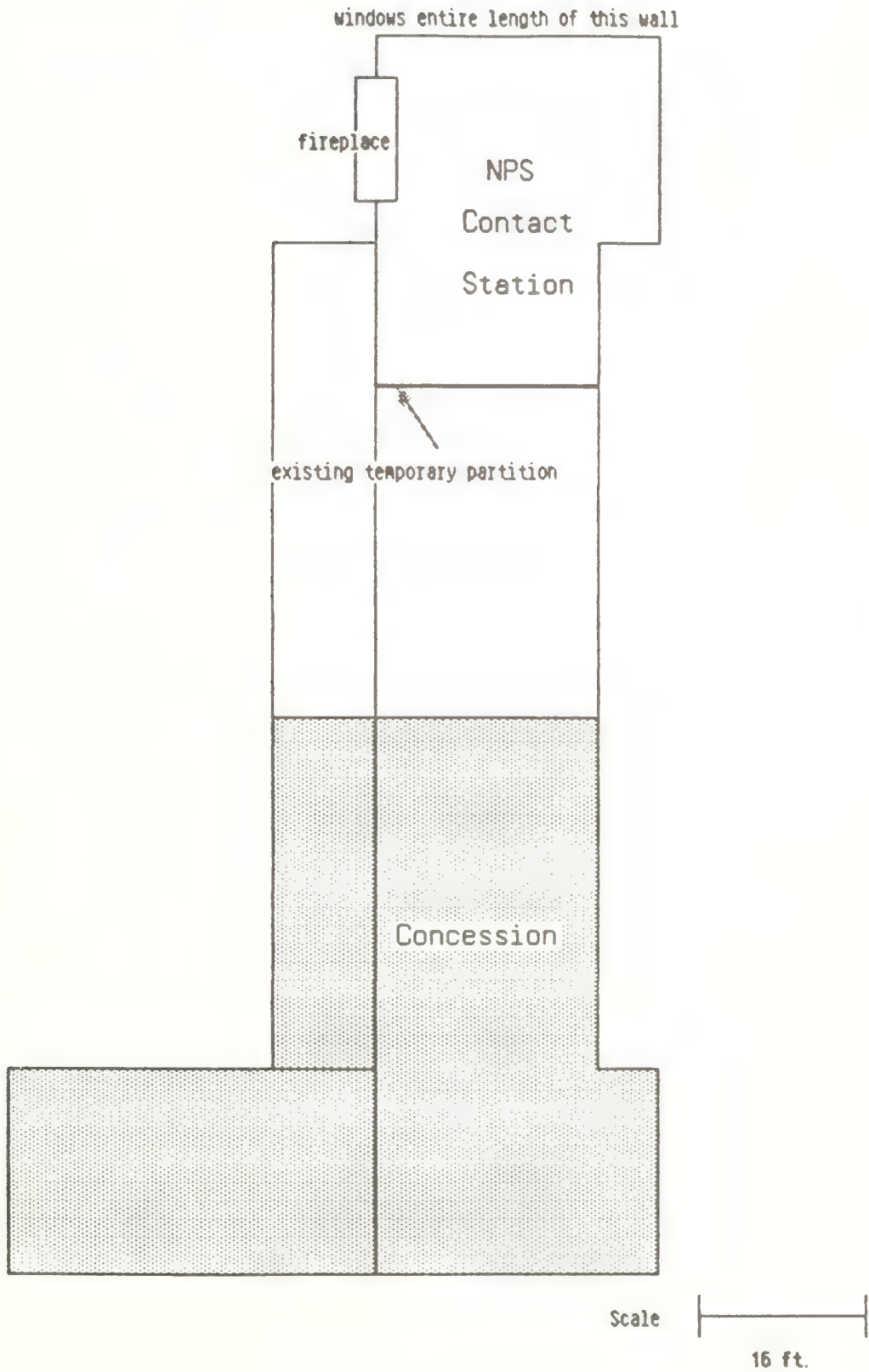
57. The planning process for the Giant Forest area during these years may be traced in four NPS documents: U.S. Department of the Interior, (Continued)



Figure 12. Plan of Market from Interpretive Prospectus (1986, follows page 15).



# GIANT FOREST MARKET





While the residence and comfort station (which is scheduled to be converted to a self-contained recirculating toilet system) will be retained to serve their present functions, the market building has been designated for adaptive rehabilitation. Approximately one-half of the structure will be occupied by the concessioner for over-the-counter food and retail gift/souvenir sales and the other half will serve as an NPS visitor information/contact station.<sup>58</sup>

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57. (cont.) National Park Service, Draft Environmental Statement, DES 77-36, Proposed Development Concept Plan, Giant Forest/Lodgepole Area, Sequoia and Kings Canyon National Parks; U.S. Department of the Interior, National Park Service, Final Environmental Statement, FES 79-58, Proposed Development Concept Plan, Giant Forest/Lodgepole Area, Sequoia and Kings Canyon National Parks, June 1979; U.S. Department of the Interior, National Park Service, Development Concept Plan, Giant Forest/ Lodgepole Area of Sequoia and Kings Canyon National Parks, February 1980; and U.S. Department of the Interior, National Park Service, Environmental Assessment for the Modification of the Development Concept Plan, Giant Forest, Sequoia/Kings Canyon National Parks, California, July 1982.

58. U.S. Department of the Interior, National Park Service, Harpers Ferry Center, Division of Interpretive Planning, Interpretive Prospectus: Sequoia and Kings Canyon National Parks, Giant Forest/Clover Creek District, January 1986, pp. 13-15. A copy of the projected space utilization of the market may be seen on the following page.



## CHRONOLOGICAL SUMMARY







## CHRONOLOGICAL SUMMARY--GIANT FOREST MARKET

### 1928

Gilbert Stanley Underwood and Company of Los Angeles, California, was commissioned by Sequoia and General Grant National Parks Company to design Giant Forest Market.

### May 29, 1928

Plans were submitted by Underwood to National Park Service; see plan on following page.

### August 2, 1928

Plans were recommended for approval by NPS Landscape Architect Thomas C. Vint and Superintendent John R. White.

### August 11, 1928

Plans were approved by Acting NPS Director Arno B. Cammerer.

### August 1928

Construction commenced by Sequoia and General Grant National Parks Company.



Figure 13. Drawing, "Forest Center Store for Sequoia National Park" (5/29/28). This is the G.S. Underwood plan for Giant Forest market as approved by NPS Director Cammerer August 11, 1928. The plan shows three major features which were not included in the actual construction: Log framing (changed to squared timbers), a pergola and a second rear side dormer (both were deleted). The final construction drawings and "As Built" drawings for the market, if they exist, have not been located. (NPS drawing #102 SEQ/8022).











#### September 1928

"Rough construction" was completed.

#### May 1929

The structure was "practically completed" and operating.

#### August 1929

The roof was stained dark green.

#### September 1929

A new village road and side walks in front of structure were completed and log curb installed. (See HABS drawings in Architecture/Engineering data, sheet 3 for exterior evolution of market 1928-1938.)

#### 1929-30

First extant photograph was taken, see figure 14.



Figure 14. Market, View from Southwest (ca. 1929-30, prior to the remodeling in the summer of 1930). In this view, the front of the south wing looks identical to the front of the north wing except there are no doors. (Photographer and date unknown, SEQU archive)











#### October 1929

Carpenters remodeled the structure to serve the needs of winter guests.

#### Spring-Summer 1930

Reconstruction of one end (south) of store was done to provide a "winter lounge room with large fireplace" and "finishing of the interior of the entire store building"; the south wing was altered by addition of a central door and chimney; south facade was altered to current window configuration; the extant windows were probably installed at the west elevation of the main part of the market at this time; a number of photographs were taken shortly after this remodeling, see following figures.



Figure 15. Market, View from Southwest in Winter (1930-31). Although snow blocks some details, clear in this view is the fenestration modification of 1930 and including the new chimney. (Photo by Lindley Eddy, SEQU archive)







Figure 16. Market, View from Southwest (1932). The remodeling of 1930 produced, in the south wing, a single central entry flanked by windows and created the rest of the south and west facades as they are today. Notice, site grade and earth walk in front and south are much lower than today. Notice, also, double tree at right which is removed later this same year, see figure below. (Photo by Lindley Eddy; SEQU archives #03153)







Figure 17. Market, View from West, Northwest (ca. 1932). This view clarifies the previous photograph and provides information on the north wing, north facade prior to 1938 changes. A wood stove chimney flue is present as are vent stacks for plumbing fixtures. The main store entrance was at the north. The seated man may be sitting on a stack of knotty pine paneling (?). (Photographer and date unknown, SEQU archives #03156)







Figure 18. Market, View from West, Northwest (Nov. 1932). Taken from about the same angle as the previous photograph but later the same year, this view shows more of the north facade which seems to include a door. The double trunked tree at the south of the market is gone in this view and the new comfort station can be seen at far right. (Photo by John Diehl, SEQU archives #01803)







Figure 19. Market, View from South (1933). This view provides a sense of the site south of the market including log curbs, earth walkways and a wooden bench. The importance of the texture of the market shake roof is also predominant in this photograph. (Photographer unknown, SEQU archives #03152)











#### Fall 1930

Rear extension to structure discussed and deferred.

#### July 1931

Los Angeles Evening Herald states that the market was "a general store and meat market with a fresh supply of staple groceries, fresh breads and meats, vegetables, ice cream, newspapers, magazines and other necessities."

#### 1930-40

Topographic survey maps drawn in January 1930 were revised through April 1940. A copy of the portion of the map including the Village shows the market with its first shed addition--see following page.

#### Each Fall - 1930s

Market interior was "rearranged" to accommodate winter visitors.

#### 1933-1935

At an undetermined time during these years electrical power was installed in the building and the first shed addition was constructed at the rear of the market; see following figure.



Figure 20. Map of Giant Forest Village (January 1930 with revisions to April 1940). Shows first shed addition on Market prior to 1938 addition.



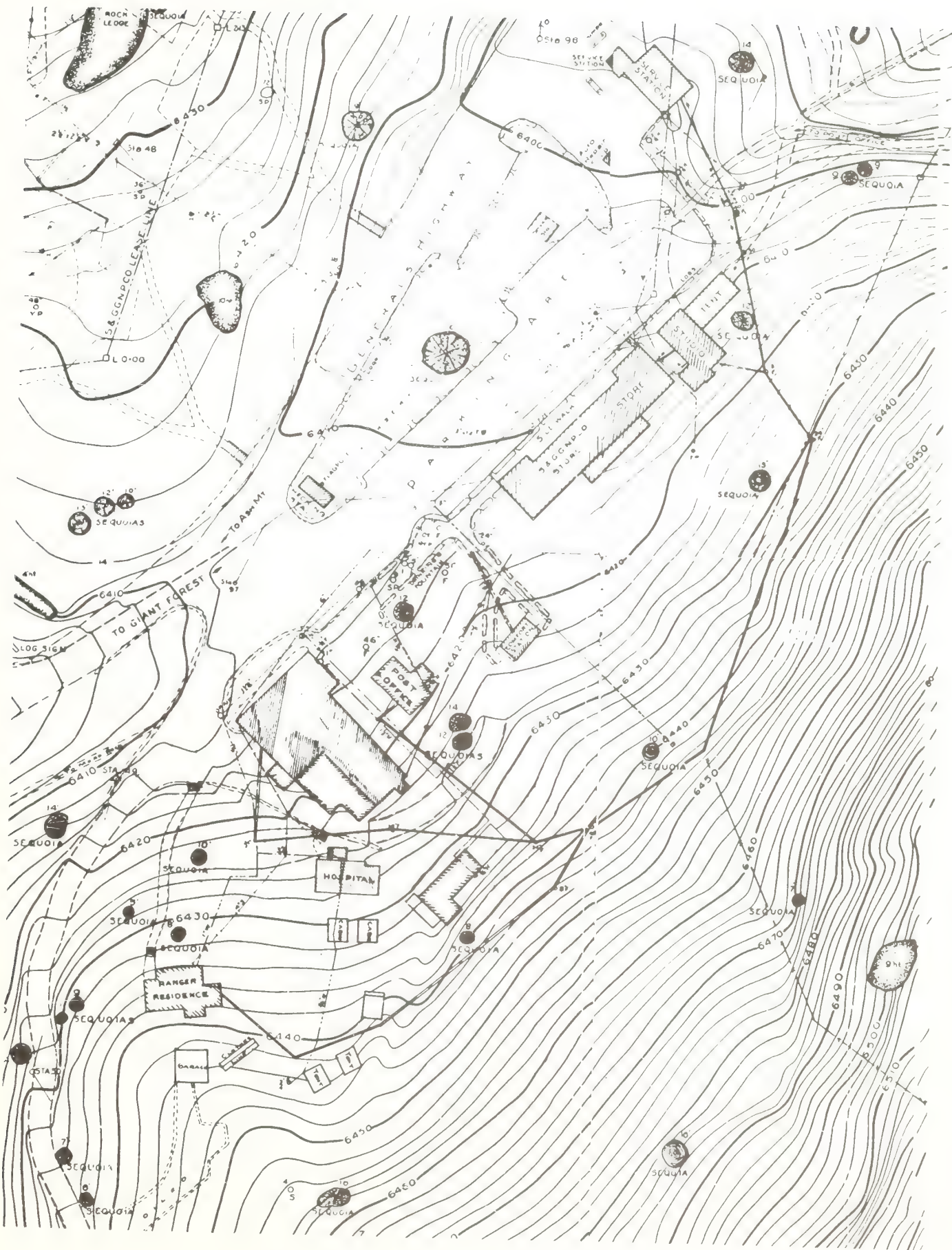




Figure 21. Market, View of Rear (west) Side (1935). This is the first known photograph showing the back of the market and the only known view of the first shed roofed addition. Electric power lines connect at the south wing. A brick chimney is present (no longer extant). The first shed addition appears to be protected along the west by a retaining wall and a door is present at its south end (features proposed in this HSR for installation at the 1938 addition). Notice the level of site grade adjacent to the south facade is much lower than today and probably allows the proper functioning of the crawl space vents which are now buried (Photo by Lloyd Fletcher, SEQU archives #05185).











October 29, 1937

Plans for enlarging and reconditioning the market were prepared by George L. Mauger

Fall-Winter 1937-1938

Improvements to the market building include a north wing addition and the extant rear or second shed addition. Other improvements that were probably made during this period include reconfiguration of north elevation of north wing, changes to west elevation of south wing, and addition of gas heaters. This work was part of a larger multiple-building remodeling project. Sheets one and five of the construction drawings, which show the proposed market improvements, are reproduced on the following pages.



Figure 22. Location Plan for 1938 Additions to the Market (October 28, 1937). This portion of the village site map shows, with dashed lines, the (then) existing shed addition and the proposed additions using diagonal hatch lines. (NPS drawing #102 (NP-SEQ)/2011 sheet 1 of 5).



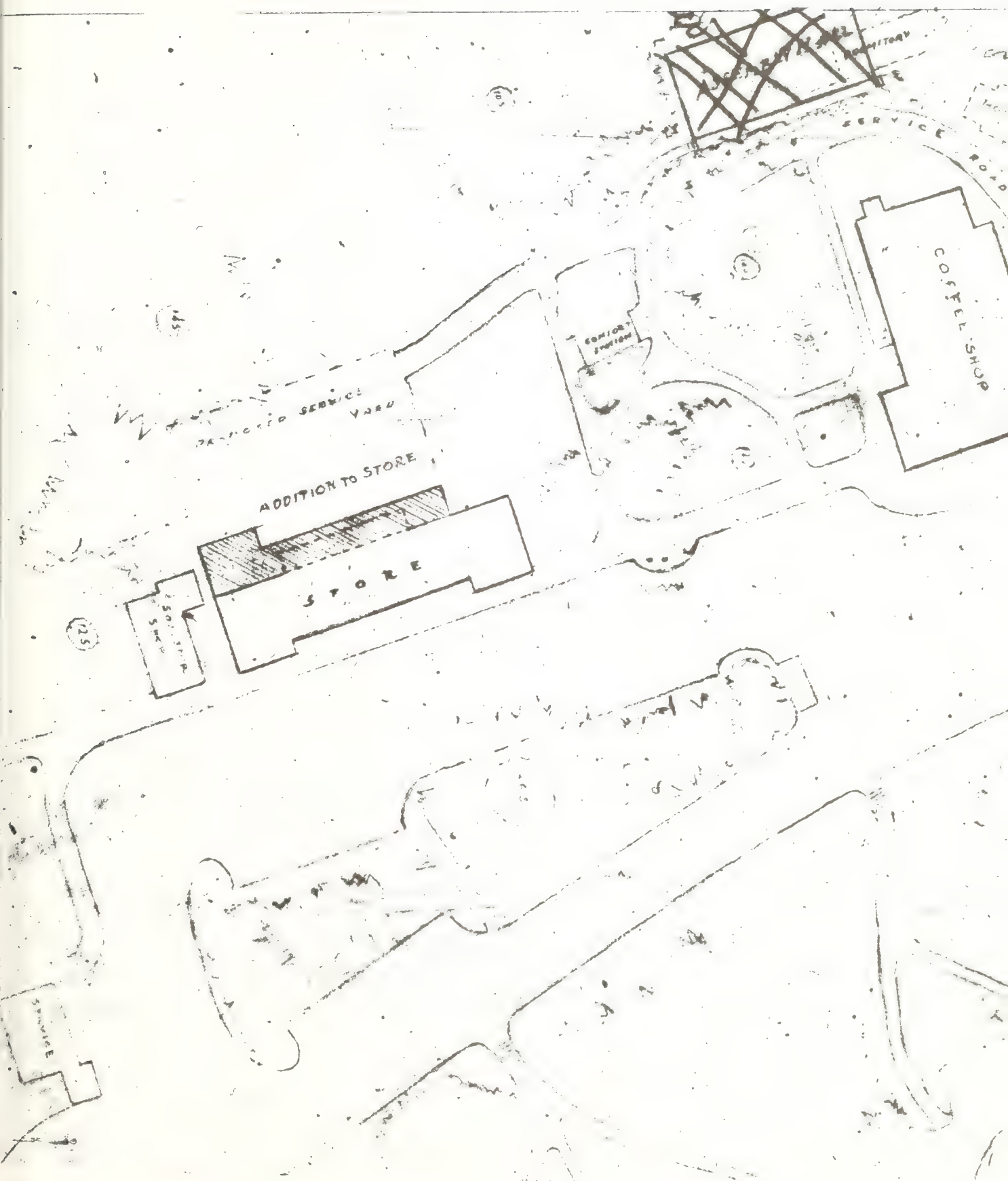
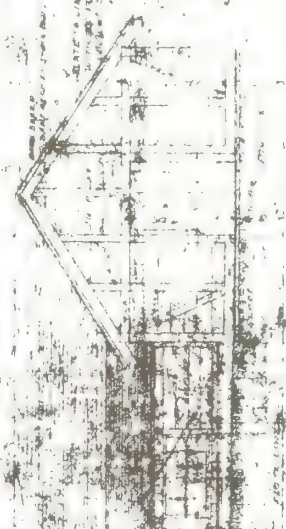




Figure 23. Market Plans and Details Showing 1938 Additions (October 28, 1937). The notes indicate that the new work is intended to be the "same" as existing construction. These are considered construction plans, however, "As Built" drawings, if they exist, have not been located. (NPS drawing #102 (NP-SEQ)/2011 sheet 5 fo 5).





ADDITIONS TO  
SOUTH-WEST STORE  
SECONDA NEWARK CALIF.

LEONARD A. A.

[illegible]







#### Winter 1940-1941

A portion of the market was converted for use as a lounge room/lecture hall to accommodate winter visitors.

#### August 29, 1941

Plans were prepared by Mauger for additions to north and south ends of the market (north for expansion of market space/south for post office); see following pages.

#### December 3, 1941

Specifications for north/south additions were submitted by Mauger to NPS.

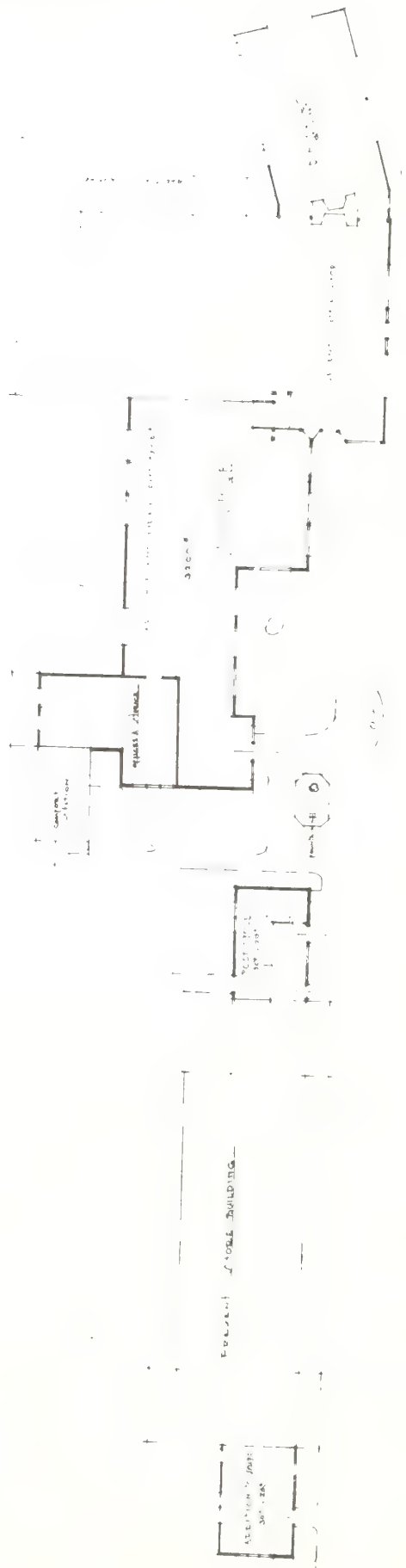
#### January 1942

Plans for north/south additions were deferred because of World War II and NPS policy to commence phasing visitor facilities out of Giant Forest area.



Figure 24. Market Plans Showing Proposed (but never undertaken) Additions  
(December 3, 1941).





REAR PORCH ADDITIONS TO GUANT. FORMER VILLAGE



Figure 25. Market Plans and Details Showing Proposed Additions (August 29, 1941). Of interest is the note which reads, "proposed additions to match present building in exterior appearance." (but never undertaken)

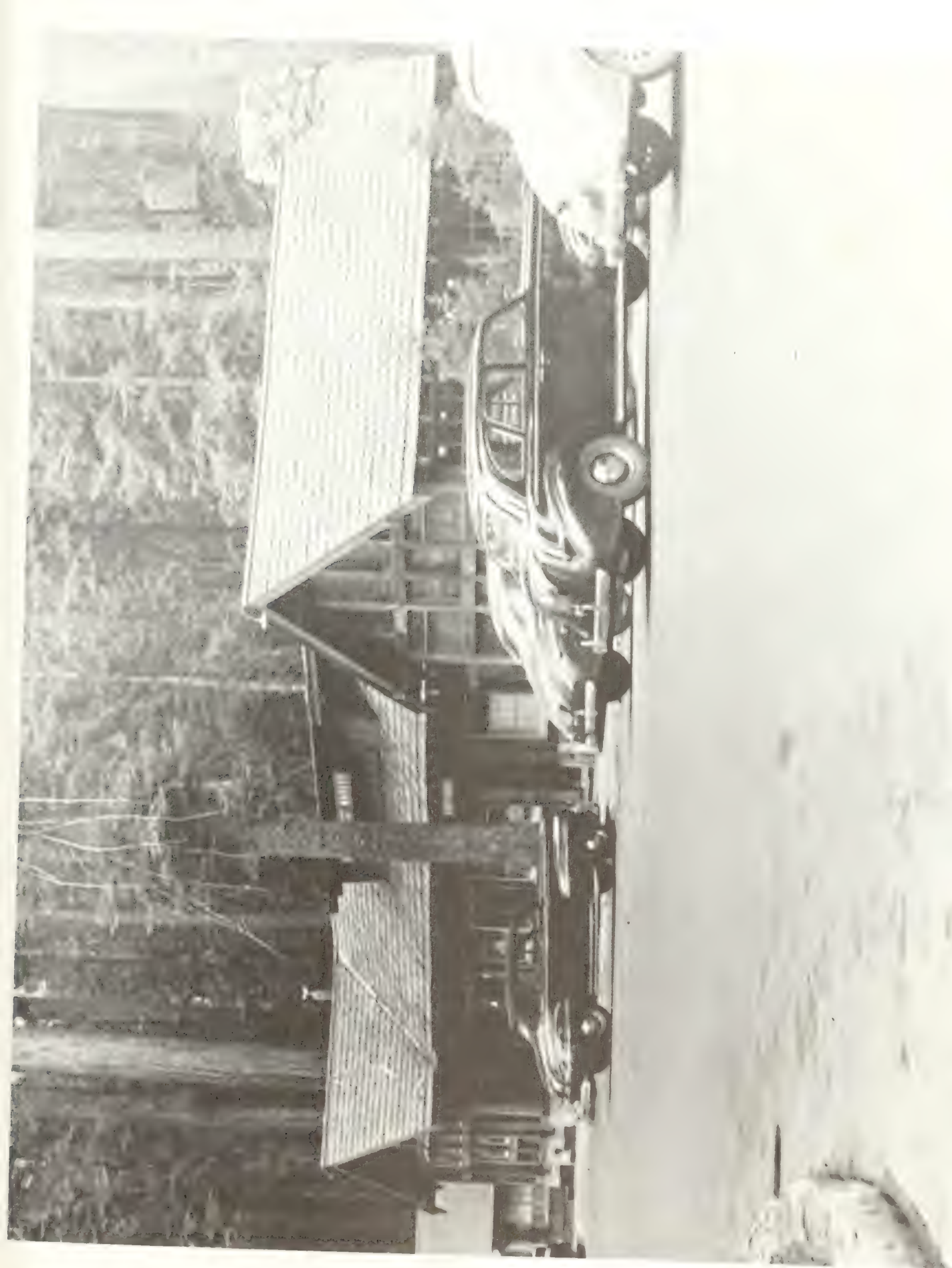






Figure 26. Market, View from Southwest (1947). In this post war view several features are notable as compared to the previous (1932) view from this angle: The front elevation of the south wing has two doors with transoms (as today) instead of the single central door; the building's signs have been changed, entrance relocated, the log "curb" has been replaced with stone, an outdoor lamp has been installed at the gable end, and trees have grown up at the site south of the market. Also, of note are the light fixtures slightly visible through the south facade windows--they appear to be similar to the electrified gas lamps presently extant in room 100. (Photo by Sam Pusateri, SEQU archives #05143).











July 1946

Electric refrigeration system ("walk-in-coolers") was installed.

1954

"Ice house" was added to area behind market for storage of ice and fuel for sale (removed by 1983).

1966

Along with other facilities, the market was sold to Fred Harvey; this change in concessioner ownership may have resulted in operational and/or architectural modifications. At some time during the Fred Harvey years (1966-1971) a "Commercial Building Record" was completed--see following page including a sketch plan.

1971

Along with other facilities, the market was sold to Guest Services, Incorporated (GSI).

1973

At least for a time, the market seems to have shut down, perhaps after the sale to GSI. In 1973 a number of photographs (documentary in nature) were taken; several are reproduced on the following pages.



Figure 27. Market--Commercial Building Record (1966-1971). The sketch plan shows an otherwise undocumented 8'x10' addition at the north end of the market. Its purpose is unknown. It may be the barber shop said to have existed at this end of the building. It was removed prior to the 1973 photographs. See also notes at "1974" entry.



ADDRESS GIANI FOREST VILLAGE

BASE PRICE 74% FACT. @ 1.37 = 10% COMPUTATION

444

Remarks:

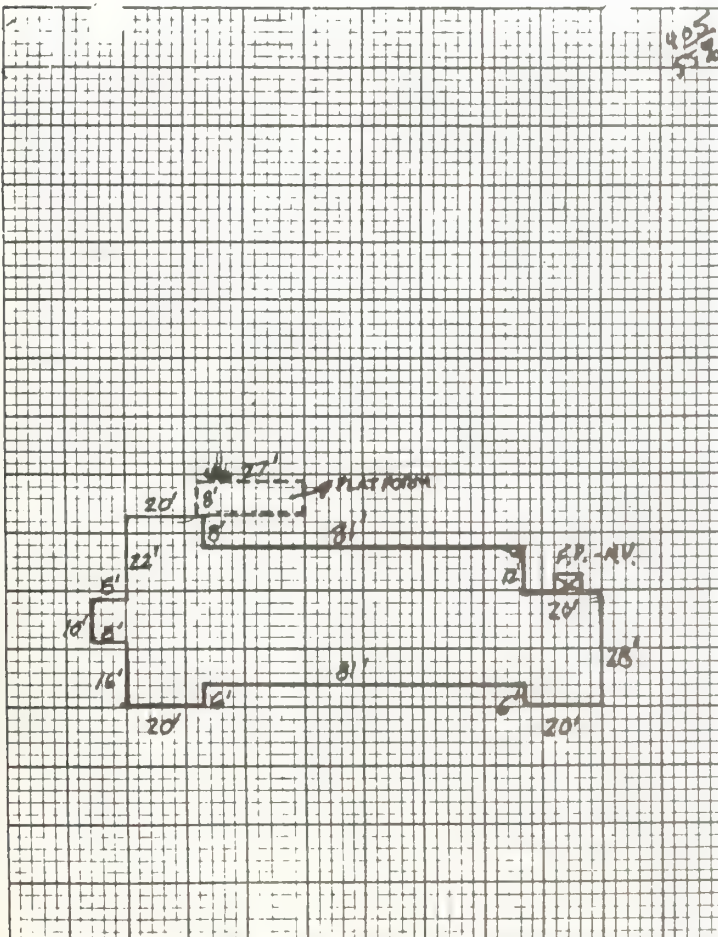




Figure 28. Market, View from West, Southwest (1973). Apparently shut down at this time, this view includes several aspects of interest compared to the previous view (1947): gable end lamps have been relocated to below the roof overhang; signs are gone; wooden ramps approach two doors; and the deteriorated roof is a major subject of the 1973 photographs. Of note is the partial replacement of shake roofing with wooden shingles at the north end. (Photo by Bill Jones, SEQU archive collections)







Figure 29. Market Dormer and Roof Detail (1973). The shake roof, some 44 years old at this point, is severely deteriorated. Notice edge flashing on dormer roof and roll roofing (it had no shakes), and outdoor lamp under roof eave. (Photo by Bill Jones, SEQU archive collection)







Figure 30. Market Detail (1973). Concrete pads were placed for trash can, telephone and stair bases. Notice ramp to door not presently in use. This detail shows a portion of the shakes replaced with wood shingles; a significant textural change. (Photo by Bill Jones, SEQU archive collection)







Figure 31. Market Roof Detail (1973). This view shows that the 1938 shed roofed addition had only roll roofing (no shingles). Notice the main market roofing is of wooden shingles which include double shingles at every fifth course. The northern facing leaf of the north wing gable, too, was replaced in this style (Photo not reproduced here). The original shake roof was replaced on these roof leaves. (Photo by Bill Jones, SEQU archive collection)







Figure 32. Market Detail at West (1973). The condition and design of the original shake roof is clearly seen here. The gas manifold cabinet, at right, was installed by this period. Notice the present elevation coating of asphalt pavement has yet to be placed and that the crawl space vent is exposed by a depression in the earth walk. (Photo by Bill Jones, SEQU archives collection)







Figure 33. Market from North East (1973). The fifth-course doubled roof pattern is clear in this view of the 1938 north wing addition. Of interest, too, is the wooden loading dock, the hot water heater and the building at far left (ice making house?) which are no longer extant. (Photo by Bill Jones, SEQU archives collection)











#### 1974

Lean-to barber shop was removed from north wing of building. Its date of construction is undetermined.

#### 1975

Bar was opened in south wing of building with the entrance to the left of the bar, through a door no longer in use.

#### 1975

Realignment of interior walls and installation of metal roofing was done. The partition separating rooms 100 and 101 was installed and finished with knotty pine.

#### 1975-1976

Installation of new electrical wiring system was done.

#### 1978

Installation of interior fluorescent lighting was done.

#### 1981

Photographs were taken in 1981, several are reproduced on the following pages.



Figure 34. Market from West (9/81). The aluminum sheet roofing installed in 1975 is visible in this view. The public telephones, too, have taken their current location. (Photo by Jill Timm, SEQU archive collection).







Figure 35. Market from West, North Half (9/81). This view completes the previous view of the west facade. Notice the snow shed at the north entry. (Photo by Jill Timm, SEQU archives collection)







Figure 36. Market, West Facade Detail (1981). Clarifying the previous views, the present elevation coating on the asphalt walk has been installed in front of the market, including the ramp at its entrance. (Photo by Jill Timm, SEQU archives collection)











## 1983

Bar area was remodeled; one of the original doors in the south wing was reopened; bar counter top of sequoia slab was moved from west wall to center of room

## 1983-84

Historic American Building Survey (HABS) documentation conducted; photographs were taken ca. winter 1983, two are reproduced on the following pages, several others may be seen in the Architecture/Engineering Data section, which also includes 1987 record drawings as part of the HSR effort to complete the HABS documentation. A new freezer and ramp were installed behind the market after the HABS photography.

## 1984

Addition of wooden steps and porch to north wing.



Figure 37. Market View from West (ca. 1983). A sign at the right hand entry door indicates the Fireside Room has been established by this date. (HABS #CA 2148 B-1).







Figure 38. Market from Rear (east) Side (ca. 1983). The refrigeration building extant today, has not been built in this view. On the other hand, the ice making building and wooden loading dock has been removed (see figure 33). (HABS #CA 2145 B-4).











## CHRONOLOGICAL SUMMARY--RANGER'S RESIDENCE/GARAGE

### March 1930

First sketches and plans were prepared by Merel S. Sager, NPS landscape architect (no copies extant)

### Spring 1931

Allocation of \$4,550 was made; modifications were made in exterior/interior design

### June 1, 1931

Plans (prepared by Sager) were approved by Acting NPS Director Cammerer; see 3 sheets of plans and 4 pages of specifications on following pages

### June 25, 1931

Construction commenced with site work

### August 5, 1931

Excavation was completed; foundation was 75 percent completed; all building materials were at the site.

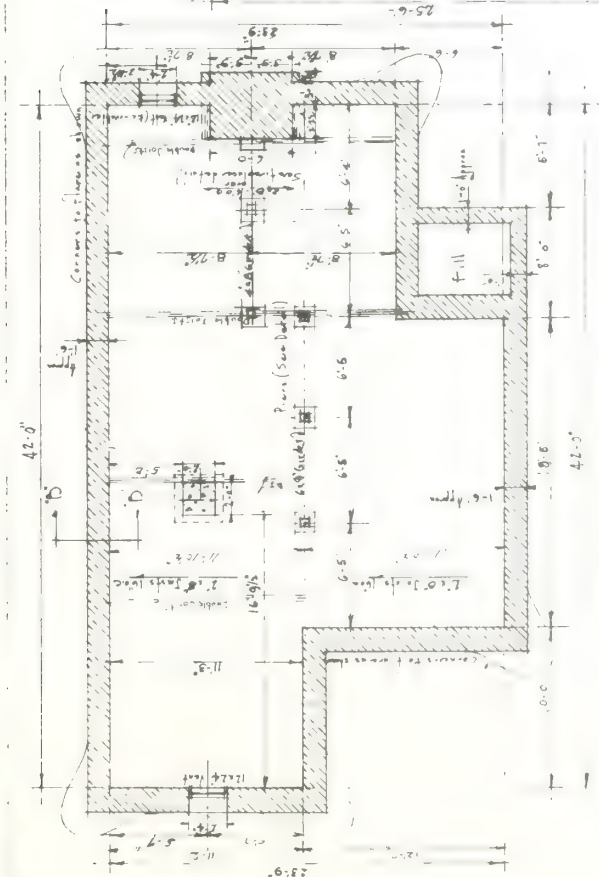
### September 4, 1931

Construction was completed by this date (although there is no documentation relative to construction of the garage, it is likely that it was built concurrently with the residence).

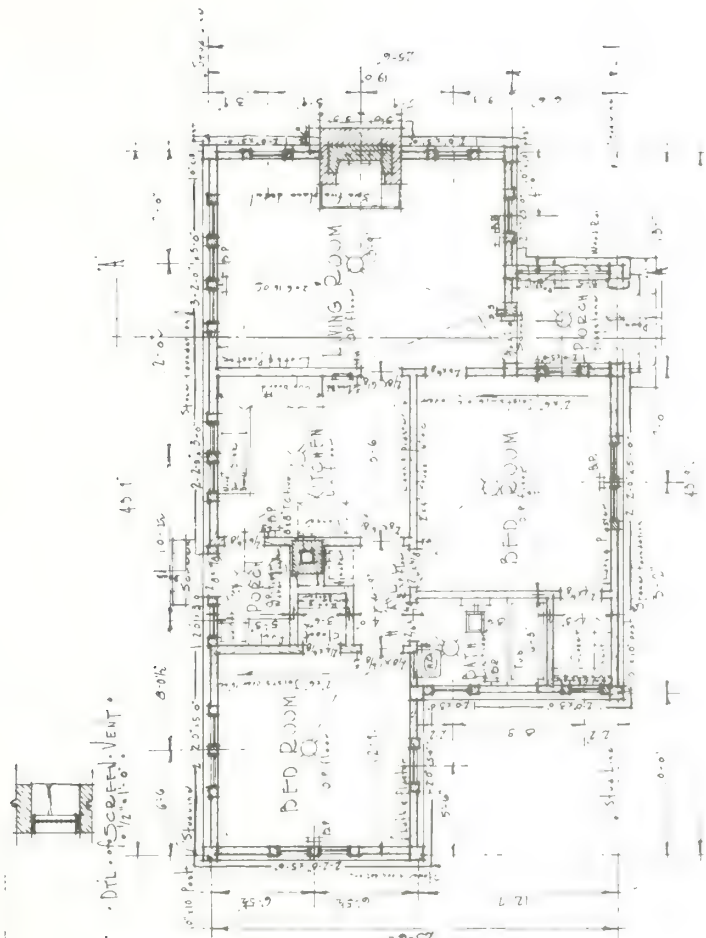


Figure 39. Ranger Residence Construction Documents (6/1/31). The known construction documents for the ranger residence include 3 sheets of drawings and 4 sheets of specifications. These are reproduced on the following pages. "As Built" drawings, if extant, have not been located and it is clear that the ranger residence was not built exactly as drawn here. (NPS-SEQ-321A)

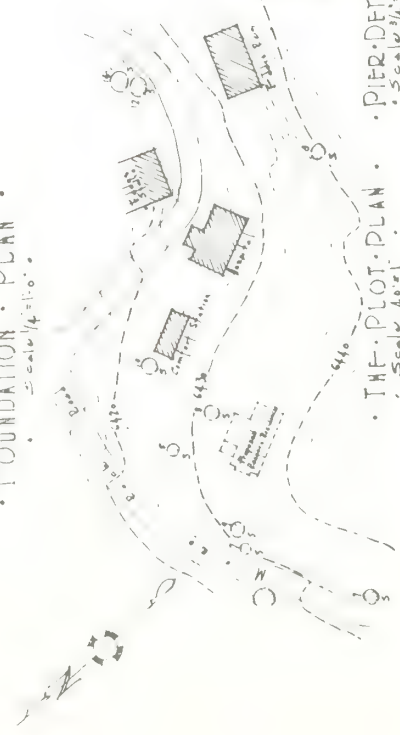
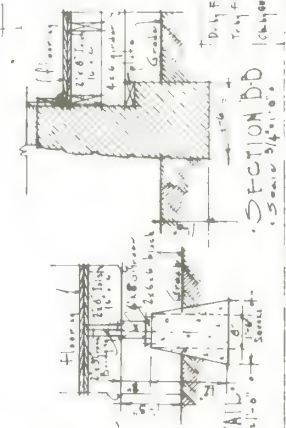




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Scale 1:100.



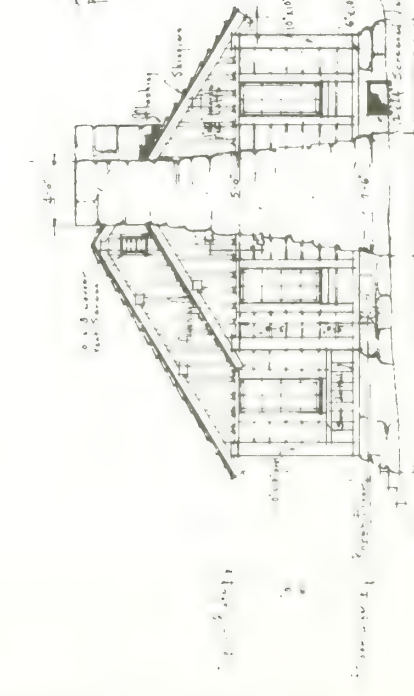
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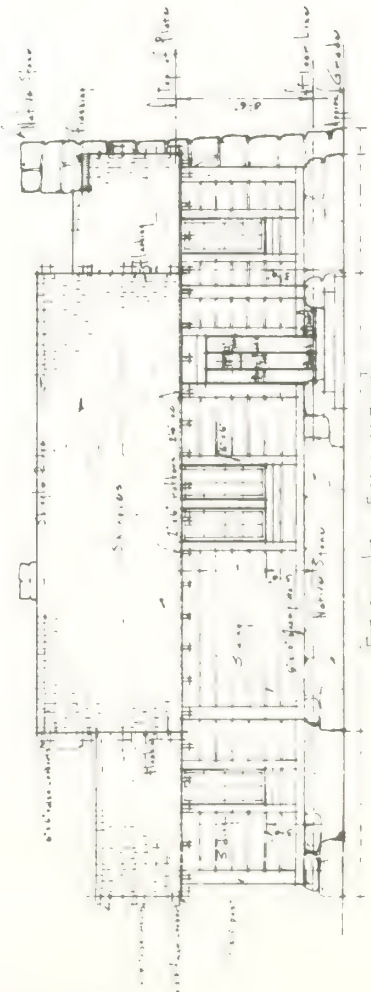
US DEPARTMENT OF INTERIOR-NATIONAL PARK SERVICE-Denver, CO  
 • SEQUOIA NATIONAL PARK • Sequoia National Park  
 RANGERS RESERVE-GAY FOREST-1914  
 • DESIGNED BY LANDSCAPE ARCHITECT • 1932-4



Pick +  
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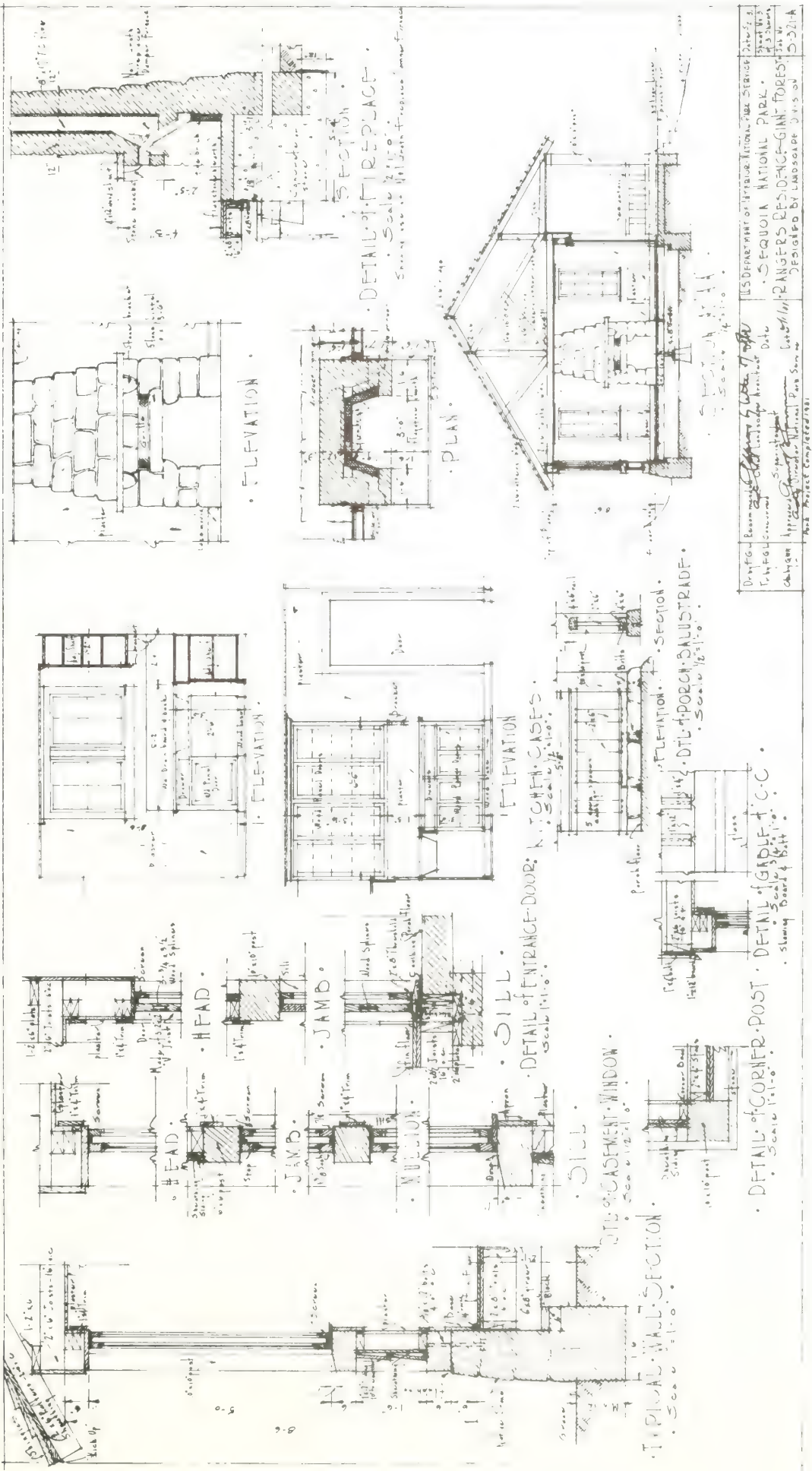
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4. RENT. ELEVATION.  
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D-146 1-14-60 Chicago	Recommended by letter of 10/27/61 Chicago 1-14-60 Chicago	DEPARTMENT OF INTERIOR NATIONAL PARK SERVICE • SEQUOIA NATIONAL PARK • GRANGER RESIDENCE-GIANT FOREST • DESIGNED LANDSCAPE DIVISION	Date 2-24-61 3-14-61 5-31-61
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Drawn by	Engineer	Checked by	Supervisor	Approved by	Chief Engineer	Designated by	Chief Engineer
W. H. H. H.	W. H. H. H.	W. H. H. H.	W. H. H. H.	W. H. H. H.	W. H. H. H.	W. H. H. H.	W. H. H. H.
Date	Date	Date	Date	Date	Date	Date	Date
1910	1910	1910	1910	1910	1910	1910	1910

U.S. DEPARTMENT OF AGRICULTURE, NATIONAL FOREST SERVICE  
 SEQUOIA NATIONAL PARK  
 RANGERS RESIDENCE - GAITHER FOREST  
 DESIGNED BY LANDSCAPE ARCHITECTS  
 1910







SPECIFICATIONS FOR RANGERS' RESIDENCE  
GIANT FOREST--SEQUOIA NATIONAL PARK

Field Headquarters  
San Francisco, Calif.  
May 27, 1931.

EXCAVATION

To be followed according to detail, giving a minimum clearance of 2 ft. 1 in. between grade and finished floor.

FOUNDATIONS

The maximum thickness of foundation footing not be [to] exceed 1 ft. 6 in. Foundation shall be carried 12 in. below grade line.

(a) Masonary [sic] shall be carried 6 in. above floor line. All joints above grade line to be raked to a depth of 1 in. Thickness of joints to be not less than 1 in. nor greater than 2 in. Native stone to be used with "weathered face" exposed. No flat face stones to be used. Corner face of wall to flare as indicated on basement plan and elevations, to the approval of Landscape Architect.

(b) Fireplace to be of native stone as shown by detail drawing. Flagstone hearth neatly laid. 8 in. by 17 in. T.C. flue to be installed.

(c) Entrance porch floor to be of flagstone.

(d) Steps to be of native stone with a sufficient number of risers from porch floor to grade to assure easy climbing. Stone steps occur at rear door.

BRICK WORK

Chimney in kitchen to be of brick with 8 in. by 8 in. T.C. flue. Chimney above roof line to be stone.

(a) Fire brick to be used in back of fireplace.

ROUGH CARPENTRY

All framing shall be of No. 1 native fir, free from large, loose knots or defects which might impair its strength or durability.

(a) Roof shall be framed with 2 in. by 6 in. fir rafters, spaced as shown on drawings. Roof pitch to be as shown.



Roof shall be covered with 1 in. by 12 in. sheathing, nailed at every bearing and breaking joints at every third board. 1 in. by 6 in. bracing in attic as shown.

(b) All members marked 10 in. by 10 in. post. 6 in. by 6 in. post and 6 in. by 10 in. base plate shall be fir, free from any defects. These members shall be cut to a smooth surface which will give a secure fit to the sash and screen.

(c) Floor joists to be 2 in. by 8 in. native fir spaced 16 in. O.C. resting on a 4 in. by 6 in. girder, as detailed. Sub-flooring to be 1 in. by 12 in. rough lumber. Finished floor to be 1 in. by 4 in. No. 1 O.P.

(d) Ceiling joists to be 2 in. by 6 in. native fir spaced 16 in. O.C.

(3) 1 in. by 12 in. sheathing on exterior stud, covered by 1 in. by 10 in. siding, having a 2 in. overlap of each member.

(f) 6 in. by 6 in. and 6 in. by 10 in. false rafters to be of native fir.

#### MILL WORK

(a) Windows to be framed as detailed with 2 in. heads, mullions and jamb of O.P. Windows sizes given on drawings. Windows to be securely fastened to each post insuring a good weather joint. All sash to be sugar pine, 1-3/4 in. thickness to swing out.

(b) Front and rear doors to be made on job, according to detail.

(c) All interior windows and door trim shall be well seasoned No. 1 O.P. Base mould shall be of No. 1 O.P. with 1/4 in. round, as shown.

(d) 2 in. by 8 in. threshold shall be of oak for front and rear doors.

(e) Kitchen cupboard to be built according to detail drawing. Shelf and rods to be placed in closets. Medicine cabinet to be installed into stud walls. Porch rail shall be according to detail. Iron board to be built on job.

#### SCREENS

(a) To be as detailed on drawings.

(b) Louvres and vents to be as detailed.

#### PLASTERING

(a) The interior wall shall be covered with "TUSCON" Diamond lath, or equal.



(b) The plastering shall be two coats using an approved brand of hardwall plaster with a trowel sand finish coat. This finish to contain a large proportion of clean sharp sand, sifted through a screen of 100 meshes to the square inch. Plaster marks to be cleaned from all interior wood surfaces.

#### ROOFING

A standard roofing paper shall be placed between shingles and sheathing. 24 in. shingles to be used, 8 in. exposed to weather and doubled every fifth course. End shingles at eaves to have "kick up" as shown.

#### LINOLEUM

Kitchen and bath room floors to be covered with a standard brand linoleum.

#### SHEET METAL WORK

Flashing to be No. 26 "TONCAN" or equal, "rustless" galvanized iron, and shall be neatly and carefully applied and made weather tight. Flashing to be applied wherever indicated on drawings. Where stone comes in contact with a wood member, a secure weatherproof joint is required.

#### BOLTS

Provide 5/8 in. by 12 in. bolts, 4 ft. 0 in. on center for anchoring wood members to stone. These bolts shall have a 3 in. by 3 in. washer on lower end, buried in masonry, and shall be threaded on upper end for nut.

#### CAULKING

To be used wherever indicated on drawings.

#### GLAZING

All glass throughout shall be "Grade A", double strength American glass, or equal.

#### HARDWARE

19 sets "Whitco" Casement Operators.

19 Mortise Strike Casement Fasteners.

Hardware for doors, screens, and cupboards to be selected.



### PAINTING

All colors of paints, tints or stains shall be determined later by the Superintendent.

- (a) Exterior painting to conform to local buildings.
- (b) The interior wood work shall receive a stain and a flat varnish finish as manufactured by Murphy Varnish Company, or equal.
- (c) Wood floors to be treated as best suited to give lasting usage.

### PLUMBING

- (a) All rough plumbing to be properly concealed. Insulation on pipes.
- (b) One sink, one lavatory, one tub and one laundry tray are required as shown on plan. A good standard make shall be selected for each.

### ELECTRIC WIRING

- (a) Run wires in G-E black conduit to outlets and switches.
- (b) Switches to be General Electric push button type or equal.
- (c) Outlets to be General Electric or equal.
- (d) Base Plugs to be General Electric or equal.

### HEATING SYSTEM

- (a) A medium size "Invecto Heater" manufactured by the American Radiator Co. to be installed. Location shown.
- (b) A water heater of sufficient capacity shall be installed.

### SPECIAL HEATING

A No. 1 Groth Fireplace Damper Furnace to be installed as shown by fireplace detail.

### ADDENDA

If the building is to be furnished with guttering, it shall be built up of 16 oz. copper. Downspouts shall be 3" G.I. properly connected to the gutter.<sup>62</sup>

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62. File No. 620-58, Box 429148, FRC-NARS, San Bruno.



1931-1943

Structure was used as residence by district ranger.

1941-1947

Structure was used as residence by Superintendent John R. White.

January 7, 1947

Park building inventory was conducted, see History narrative; photograph and sketch plan were prepared, see following page.

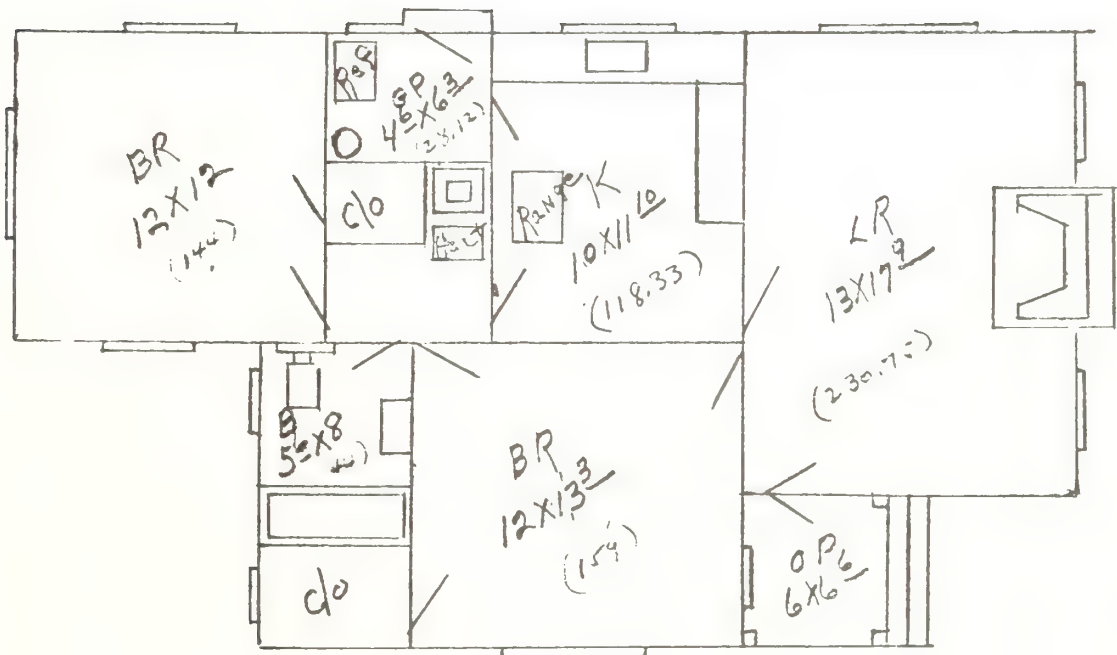
1947-present

Structure was used as residence by district ranger/park personnel.



Figure 40. Ranger Residence Photograph and Floor Plan (1/1/47)











September 1953

Plans were prepared by park personnel to build a small enclosed service area and an open porch addition at the rear entrance of the residence (the original plans were modified for this purpose).

1953-1954

Service porch and (likely) cement patio area constructed at rear of residence. A cabinet for storage of liquified petroleum containers was added to the gable end of the garage.

Late 1960's-early 1970s

Park building inventory was conducted, see History narrative; floor plan sketch was drawn, see below. The sketch does not show the 1953 additions.

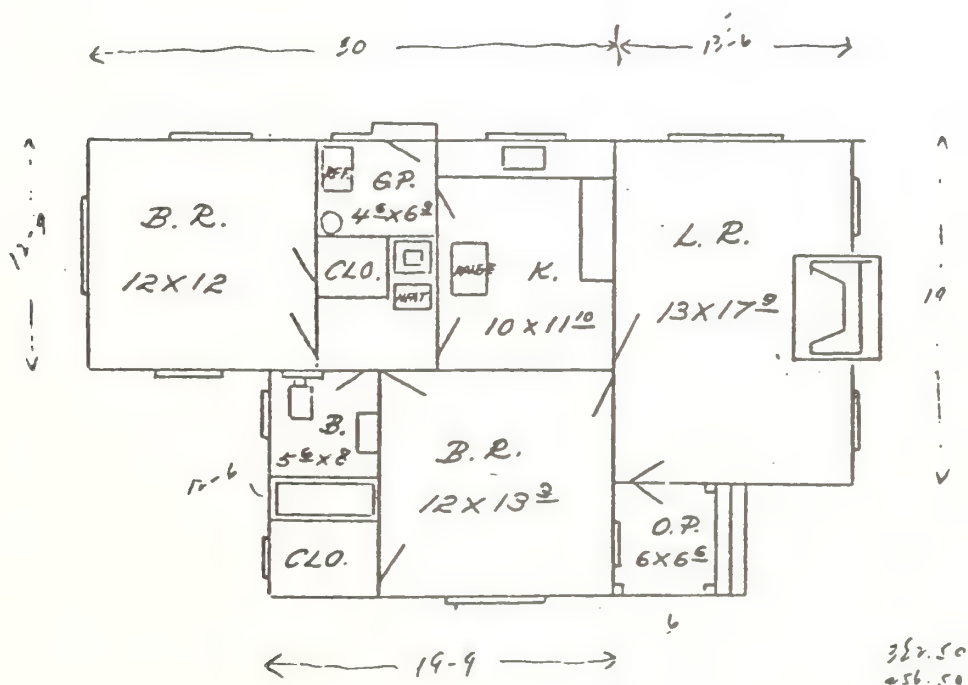


Figure 41. Ranger Residence Floor Plan (late 1960s-early 1970s).







### Late 1960s-Early 1970s

Construction of temporary snowshed (snow tunnel) connecting the residence and garage was accomplished (prior to 1075 "Classified Structure Field Inventory Report", see Historical Narrative).

### 1983-84

Historic American Building Survey conducted; several photographs were taken ca. winter 1983; see 3 views on the following pages and additional views in the Architecture/Engineering Data.

### 1983-84

Renovation of residence interior was done with installation of new electrical and heating systems and replastering of walls under Park Restoration and Improvement Program (PRIP) funding.

### 1985

Individual Building Data forms were prepared by the park including a sketch floor plan; see forms following HABS photographs.



Figure 42. Ranger Residence, View from North (ca. 1983). (HABS #CA 2148 E-2).







Figure 43. Ranger Residence/Garage, View from West (ca. 1983). (HABS #CA 2148 E-3)



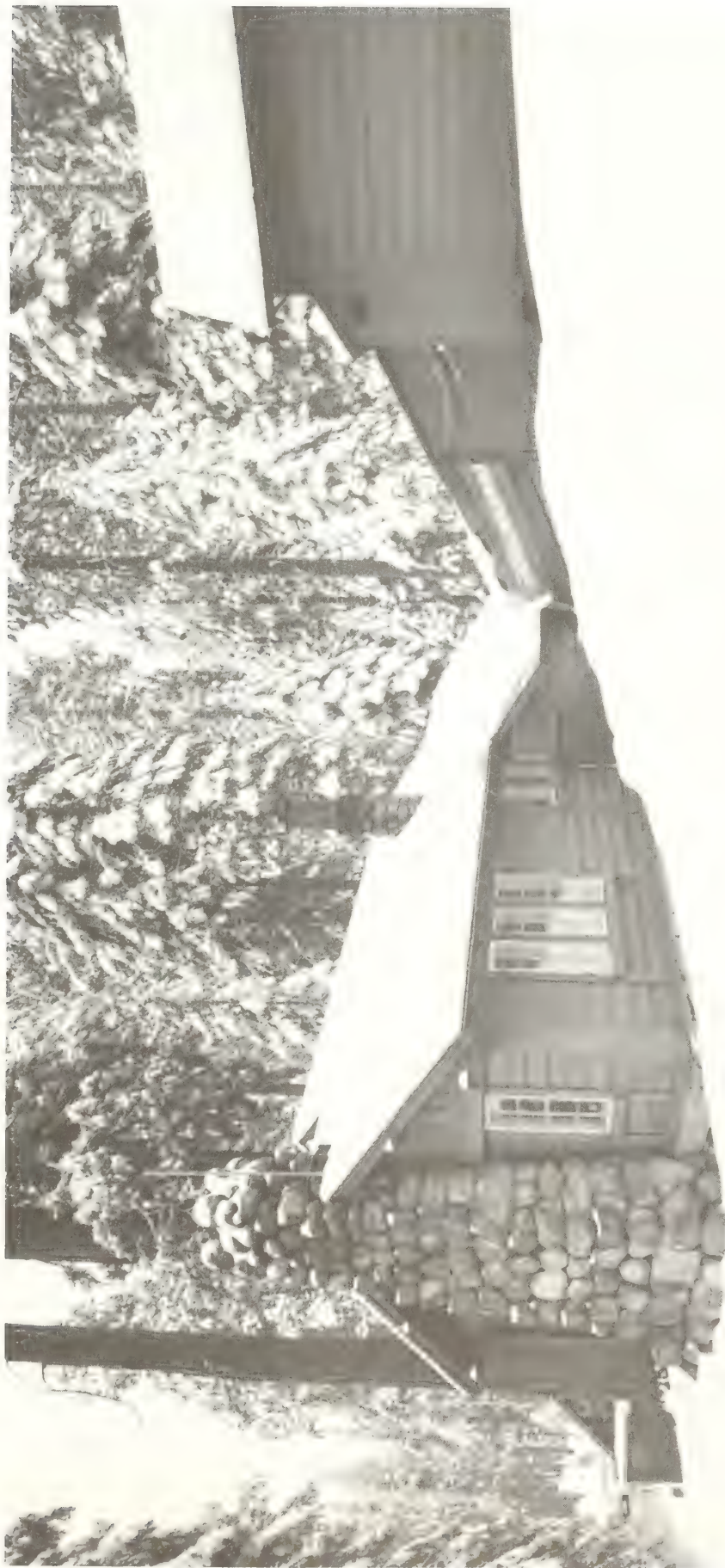




Figure 44. Ranger Residence Garage, View from South (ca. 1983). (HABS #CA 2148 E-4).







Figure 45. Ranger Residence--Individual Building Data (1985).



U.S. NATIONAL PARK SERVICE		Residence		#55	
INDIVIDUAL BUILDING DATA				Location in Park Giant Forest Village	
Preserve in duplicate. Send original to Regional Office. Retain one copy in park office.				Park, Monument, Etc. SEKI	
1. GENERAL					
Use and Occupancy employee		Owned By NPS		Operated By NPS	
Maintained By NPS		Constructed By NPS		Year 1931	Drawing No. S321 A
Remodeled By NPS				Year 1964	Drawing No.
2. VALUE		3. TYPE		4. SIZE (Sq. Footage)	
Original Cost \$ 2500.00	Present Value \$	No. Stories 1	No. Rooms 6	Basement -	Overall 900
				Basement -	1st Floor 900
					2nd Floor -
5. CONSTRUCTION					
Construction Type frame	Foundation rock & mortar	Walls, Exterior rustic sid.	Walls, Interior plaster	Floor wood	Roof cedar shingle
6. INTERIOR FINISH					
Walls painted	Floors stained wood & tile	Ceilings painted	Trim -		
7. UTILITIES					
Water X	Electric X	Gas -	Sewer X	Telephone X	Other -
8. MECHANICAL EQUIPMENT					
Plumbing sink, W.C., lav., tub	Heating C.I.T., fire forced air	Fuel wood & oil	Electric wall htr.	Hot Water X	Other -
9. EXISTING CONDITION (Indicate Excellent, Good, Fair, Poor - If New Building Leave Blank)					
As of (Date)	Structural	Mechanical	General State of Repair		
10. FIRE PROTECTION					
No. Hydrants 1	Size 3"	Distance 100'	Mechanical -	Extinguishing Equipment hand dry chem.	Other -

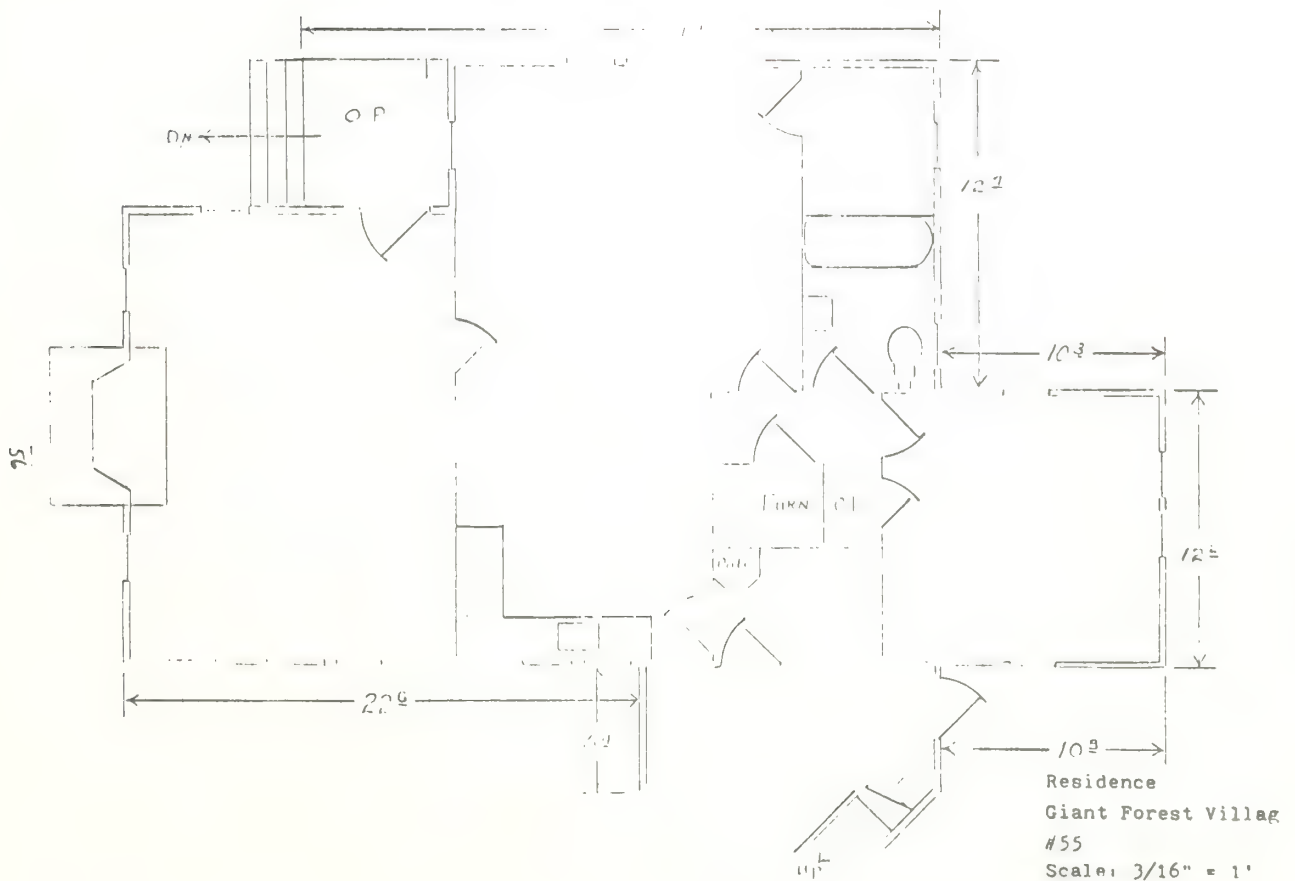




Figure 46. Garage--Individual Building Data (1985).



INDIVIDUAL BUILDING DATA

Prepare in duplicate. Send original to Regional Office. Retain one copy in park office.

Garage (Res. 55)

Location in Park  
Giant Forest Village

Park, Monument, Etc.

SEKI

1. GENERAL

Use and Occupancy employee	Owned By NPS	Operated By NPS
Maintained By NPS	Constructed By NPS	Year 1931
Remodeled By		Drawing No.

2. VALUE

Original Cost \$ 471.82	Present Value \$	No. Stories 1	No. Rooms 2	Basement -	Overall 468	Basement -	1st Floor 468	2nd Floor -
----------------------------	---------------------	------------------	----------------	---------------	----------------	---------------	------------------	----------------

3. TYPE

Construction Type frame	Foundation concrete	Walls, Exterior rustic siding	Walls, Interior unfin.	Floor Dirt asphalt	Roof cedar shingles
----------------------------	------------------------	----------------------------------	---------------------------	-----------------------	------------------------

4. SIZE (Sq. Footage)

Walls -	Floors -	Ceilings -	Trim -
------------	-------------	---------------	-----------

5. CONSTRUCTION

Water -	Electric X	Gas -	Sewer -	Telephone -	Other -
------------	---------------	----------	------------	----------------	------------

6. INTERIOR FINISH

Plumbing -	Heating -	Fuel -	Electric -	Hot Water -	Other -
---------------	--------------	-----------	---------------	----------------	------------

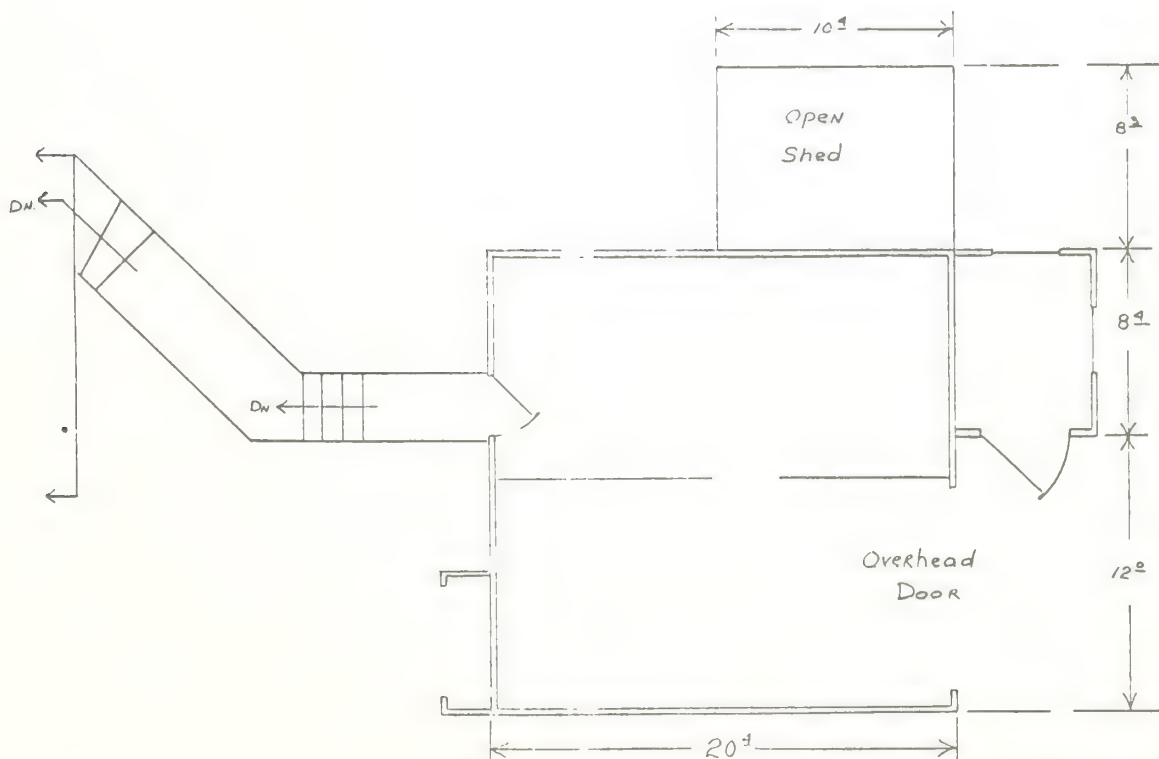
7. UTILITIES

9. EXISTING CONDITION (Indicate Excellent, Good, Fair, Poor. If New Building Leave Blank)			
As of (Date)	Structural	Mechanical	General State of Repair

8. MECHANICAL EQUIPMENT

No. Hydrants 1	Size 2 1/2"	Distance 150'	Mechanical -	Extinguishing Equipment hand	Other -
-------------------	----------------	------------------	-----------------	---------------------------------	------------

9. FIRE PROTECTION



Garage (Res. 55)

Giant Forest Village

#317

Scale: 3/16" = 1'







## CHRONOLOGICAL SUMMARY--COMFORT STATION

July 21, 1932

Plans (prepared by Sager) were approved by Acting NPS Director Arthur E. Demaray (see following page); allocation of \$2,450 was made for construction.

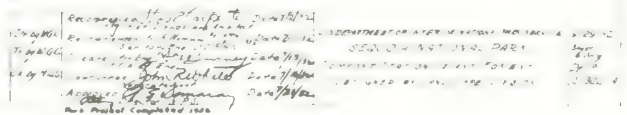
Summer 1932

Construction was completed.



Figure 47. Comfort Station Construction Plans (7/21/32). "As Built" drawings, if they exist, have not been found. It is clear that actual construction deviated somewhat from these construction drawings. (NPS Drawing #S-3021-A)







February 19, 1951

Park building inventory (see History Narrative) included a sketch floor plan; see below. The building was heated by a propane gas radiant system and may not have been electrified at this time.

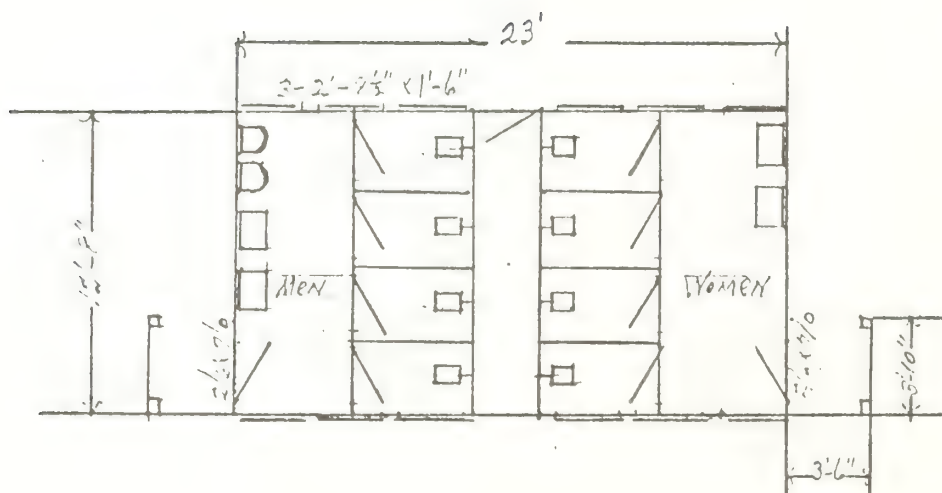


Figure 48. Comfort Station Floor Plan (2/19/51). Notice men's room contains four water closets, two urinals and two lavatories, an arrangement which neither matches original design nor extant conditions.



1964

Likely date when men's room was modified by the reduction of stall toilets from four to two and the realignment of sink and wall urinals; women's room plan was not modified. Changes in interior architectural finishes and mechanical and electrical rehabilitation probably occurred at about this time.

October 21, 1975

"Classified Structure Field Inventory Report" completed--entered on List of Classified Structures (see History Narrative)

1983-84

Historic American Building Survey conducted; several photographs were taken ca. winter 1983; see views from north east and west-southwest on following pages and additional views in the Architectural/Engineering Data.

September 1985

Individual Building Data form was completed by the park; see Form 10-768 and sketch floor plan following the HABS photographs.



Figure 49. Comfort Station, View from Northeast (ca. 1983) (HABS #CA 2148 C-2).







Figure 50. Comfort Station, View from West-Southwest (ca. 1983) (HABS #CA 2148 C-4).







Figure 51. Comfort Station - Individual Building Data (1985).



Form 10-68  
(Rev. 8-64)

U.S. DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

Building Name  
Comfort Station

Building No.  
179

# INDIVIDUAL BUILDING DATA

Prepare in duplicate. Send original to Regional Office. Retain one copy in park office.

Location in Park  
Giant Forest Village

Park, Monument, Etc.  
SEKI

## 1. GENERAL

Use and Occupancy visitor	Owned By NPS	Operated By NPS
Maintained By NPS	Constructed By NPS	Year 1933
Remodeled By		Drawing No. SK 3021 A

## 2. VALUE

Original Cost \$ 2,173.59	Present Value \$	No. Stories 1	No. Rooms 3	Basement -	Overall 347	Basement -	1st Floor 347	2nd Floor -
------------------------------	---------------------	------------------	----------------	---------------	----------------	---------------	------------------	----------------

## 3. TYPE

## 4. SIZE (Sq. Footage)

## 5. CONSTRUCTION

Construction Type frame	Foundation concrete	Walls, Exterior rustic siding	Walls, Interior plywood	Floor concrete	Roof cedar shingles
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## 6. INTERIOR FINISH

Walls painted	Floors unfin.	Ceilings painted	Trim -
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## 7. UTILITIES

Water X	Electric X	Gas -	Sewer X	Telephone -	Other -
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## 8. MECHANICAL EQUIPMENT

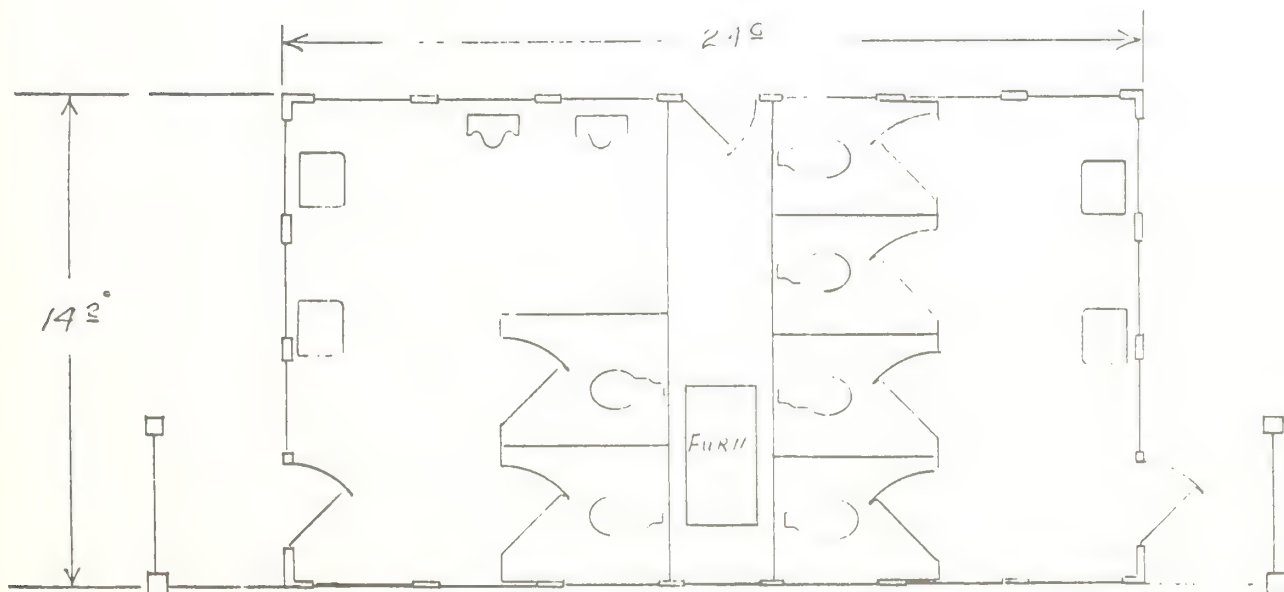
Plumbing lav, WC, ur.	Heating forced air	Fuel hot water	Electric -	Hot Water -	Other -
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## 9. EXISTING CONDITION (Indicate Excellent, Good, Fair, Poor. If New Building Leave Blank)

As of (Date)	Structural	Mechanical	General State of Repair
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## 10. FIRE PROTECTION

No. Hydrants 1	Size 3"	Distance 35'	Mechanical -	Extinguishing Equipment Hend - Other -
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Comfort Station  
Giant Forest Village  
#179  
Scale: 1/4" = 1'







ARCHITECTURAL/ENGINEERING DATA







## PURPOSE AND OVERVIEW

The purpose of this section is to clarify the inherent cultural values of the subject buildings, assess their condition in terms of existing deficiencies and proposed uses and stipulate a treatment strategy that will facilitate their use as intended by management while protecting their values. In particular, this section draws upon the historical research and architectural and engineering evaluations to establish a framework of physical significance, integrity, and condition and thus the appropriate context for correcting deficiencies and conducting the rehabilitation of the buildings to meet current standards for ongoing service.

This effort was requested by the park superintendent to assist in the proper planning for and to avoid adverse impacts on the structures as part of relocating most of the Giant Forest development to Clover Creek and specifically to assure a sensitive construction plan for these three buildings to facilitate their continued and change in use. The subsections that follow present the findings of the project team in a sequence establishing the basis for the proposed construction project.

The narrative, photographs, and Historic American Buildings Survey (HABS) drawings in the "Physical Description" subsection identify the significant features and physical characteristics of the three buildings.

The "Implications of Proposed Use" subsection focuses on the needs and impacts that could result from the proposed use and identifies constraints on the proposed use and associated modifications to minimize impacts on the integrity of the structures.

The "Analysis of Existing Conditions" subsection assesses feature condition and integrity and identifies material deficiencies, material problems, and the causes of fabric and structural deterioration both in terms of current preservation and future occupancy needs. The analysis



is presented in narrative form, summary tables and the deficiencies shown in photographs and on drawings.

The "Compliance with Regulations" subsection discusses and lists the specific actions necessary to comply with cultural resource management guidelines and identifies those treatments necessary as a result of the intervention to abide by NPS regulations and meet contemporary construction standards.

The "Recommendations" and "Cost Estimate" subsections summarize the product of the foregoing analysis and present the recommended treatment scenario, design compatibility guidelines, a scope of work for the upcoming Area Study, and the estimated construction costs. Included is a timeframe and technical outline for actions recommended to stabilize, to adaptively rehabilitate, and to assure the ongoing preservation maintenance of the subject buildings. Proposed treatment drawings are included following the recommendations subsection.

An assessment of the effect of the proposed undertaking including specific mitigation measures is presented in the "Assessment of Effect" subsection. This is followed by a listing of future considerations, in the "Future Considerations" subsection, which addresses both research and interpretive potential and precautions for treatment implementation and ultimate use.



## PHYSICAL DESCRIPTION

### ARCHITECTURAL SIGNIFICANCE

The architectural merit and characteristics of "NPS-Rustic" style present in the three structures are derived by design; these are expressed in the simplicity of line and detail, absence of ornamentation or decoration, and by a conscious use of material in the composition of their major structural elements. All three buildings can be seen as modest with a simple horizontal and vertical line geometry that approaches a conspicuous but informal symmetry which is reinforced by the use of gable roofs. Such a symmetry and simplicity of architectural lines in conjunction with the materials selected was intended to echo the plainness and restraint of a pioneering ambiance, preferred as most appropriate for national park utilitarian structures during the 1920s and early 1930s.

The materials used--stone and wood--are most compatible with this mountainscape of forest land. Squared timber frames for this locale were selected instead of log construction, apparently, to avoid any attempt to compete with the enormous scale of the giant sequoia trees as a log building could not be appropriately proportioned to them. The exposed timber frames or puncheon members, 8x8s, 6x8s, 8x12s and 10x10s, in both vertical and horizontal positions, give an appropriate proportion to the buildings while providing a theme of massiveness without competing with the huge trees.

These themes of solid massiveness and local harmony are further supported in all three buildings by the use of local uncut granite stone. In the foundation of the comfort station and ranger residence, the masonry walls are battered slightly, presenting an exaggerated sense of size, a strong image of stability, and general feeling that the buildings are well grounded and yet, like the trunks of the adjacent sequoias, grow out of the earth. The ranger residence's and market's chimneys, too, being battered, provides this flavor. The masons used irregularly



shaped (undressed) fieldstone in an uncoursed pattern with deeply raked joints, contributing to the informal rustic character. Overall, the use of stone enhances an architecture of color and texture in harmony with the setting.

These materials--stone and wood--are also expressions of the preferred theme of using pioneer building technology--romanticizing the past--during this period when labor was relatively inexpensive and the necessary craftsmen still readily available.

The market and ranger residence both contain rather massive stone fireplaces. Such designs were crucial to the NPS-Rustic of this time period as a carryover of the "campfire" effect, a cornerstone of the earliest rustic movement designs (Tweed, Soulliere and Law, 1977).

Color and texture are significant design features in the three buildings and important characteristics indicative of NPS-Rustic. Wood shingled, green painted roofs and brown stained exterior walls with green trimmed apertures was the selected, harmonizing motif. The role of texture seems more complex here than the simple natural color scheme, yet both texture and color are designed to blend with the surroundings. There appears to be a deliberate attempt to maximize wall and roof texture within the natural materials chosen. The effect of sunlight and shadow filtered through the forest canopy was exaggerated by using board-and-batten on the ranger residence gable ends, unplanned lap siding on the ranger residence exterior walls, redwood shakes on the walls of the comfort station, and wood shingle or shake roofs on all buildings with double coursing of occasional shingle lines and shake spacing on the market.

Another important theme of the NPS-Rustic style is the conscious attempt to harmonize development with the landscape. The characteristics noted already--a humble geometry and composition, and materials, colors and textures that naturally blend--contribute to landscape harmony. The ranger residence, in particular, is an excellent example of balancing the



impact of development within a natural setting. Although built in a high-visibility location on a small hill overlooking the village, it is placed adjacent to the big trees and situated so it is hardly noticed from below. Also, the fact that the buildings are situated irregularly in the village and connected by meandering trails as opposed to being laid out in a straight line was a significant conscious decision.

In addition, the Giant Forest landscape of the 1920s already had some buildings on it and it is clear that the designers of the market, comfort station, and ranger residence chose to harmonize by selecting exposed timber frames, wood, and stone similar to that used in the administration building built by the National Park Service in 1921, and in the Giant Forest Lodge and cabin development built by the Kings River Parks Company in 1922. Original plans for the ranger residence, for example, specify "exterior painting to conform to local buildings." The overall effect of the market, comfort station, and ranger residence design is, in short, compatible, nonintrusive and clearly fulfilling the "Statement of Policy" which says "particular attention must be devoted always to the harmonizing of these improvements with the landscape" (Mather, May 13, 1918).

This discussion identifies the features that clearly place the subject buildings within the NPS-Rustic genera and are the same features that characterize this historic style, making the buildings excellent examples and style models for later design efforts. These features are original to the buildings and they are intact. The alterations to the market facade and its additions through 1938 were executed in a manner that duplicated the exposed timber frame, materials, colors, and textures of the original and are thus merely an extension of the design as opposed to an adverse effect on the facade integrity. Likewise, the small 1953 addition on the ranger residence easily blends into the south facade. There are, however, an array of accretions at each building which compromise the integrity and overall effect of their design expressions. The 1975 metal roofing on the market and electrical, communication and other utility accretions at each structure are intrusions. Nevertheless, the principles



of NPS rustic design are physically manifest, although somewhat obscured, in the three buildings. They are the cultural values recognized through their National Register listing, and are the specific elements that should be preserved and protected.



PHOTOGRAPHS--DESCRIPTION



Figure 52. Market, South Wing (ca. 1983). In this winter view of several years ago (prior to the 1983 remodeling of the lounge) boards cover the four large picture windows of the south facade. Neither door in this wing is operable--both are blocked by asphalt at their sills. Notice the doors are center-hinged to fold and open to the full 5 foot width. (HABS #CA2148 B-2)







Figure 53 (left). Market, View from North (10/86). The entry stoop seen here (built about 1984), encloses a crawl space vent (see figure 55). Handicapped accessibility at this end of the building is impaired. Notice fluorescent light fixture hanging from ceiling of room 102 visible through window, these were installed in 1975-76.

Figure 54 (right). Market Entrance (5/86). This entry to the store (room 101) is equipped with an asphalt ramp. Notice hand carved wooden signs characteristic of the market throughout its history, and non-original bird screen covering on the transom.







Figure 55. Market, View from North (c. 1983). This photograph provides a clear view of the north facade prior to construction of the existing fence. This view predates the installation of the north wing entry stoop (see figure 53) and, instead, shows a snow canopy protecting the concrete stair entering room 102. The canopy was installed after 1973 and removed about 1984. Note the crawl space vent and crawl space access door. (HABS #CA 2124 B-3).







Figure 56 (left). Market Chimney (10/86). The fireplace and chimney were installed in 1930 to enhance winter operation. This has become a significant feature of the building. Made of local granite, the joints are deeply raked to express the rustic style which exaggerates material texture.

Figure 57 (right). Market Dormer (10/86). The dormer is original to the market. Several of its windows are hinged to serve ventilation needs of both the attic and, by chimney effect, through wooden grills in the ceiling of room 101, remove summer heat. See wooden grill illustrated in appendix figure D-8. The dormer roof was probably never shingled but rather covered only with roll roofing prior the 1975 aluminum sheeting.







Figure 58 (left). Market, North Facade (10/86). In this view, plywood has been removed to reveal the multi-pane windows (compare with figure 55). The stylistic rhythm of the exposed timber frame is entirely consistent between the original half of the facade (right of center) and the 1938 addition (left of center). Note, the wooden cabinet two windows from right is the exit manifold valve box for the propane gas system, a later accretion (ca. 1938).

Figure 59 (right). Market, Shed Addition (10/86). The timber frame rhythm of the east elevation of the 1938 shed-roofed addition is, again, entirely compatible with the original building. Wooden panels have been removed, in this view, to expose the windows. Notice the poor condition of the 1975 aluminum sheet roofing. The concrete foundation walls serve as retaining walls and are stepped, following the site contour.







Figure 60 (left). Market, Store Interior (room 101) (5/86). The important impact of the knotty pine on walls and ceiling is clear in this view as is the intrusive and out of character aspect of fluorescent lighting fixtures. The knotty pine was apparently installed in the early 1930s. It is nailed directly to ceiling joists but is firred out against the walls. This view faces north towards room 102.

Figure 61 (right). Market, Lounge Interior (room 100) (5/86). The dark strip flooring, knotty pine paneling and an electrified gas lamp are visible in this view looking south towards the large multi-paned picture windows. The sequoia wood bar top and stone fireplace are at left. Notice intrusive character of ceiling hung heating unit. The absence of fluorescent lighting helps preserve this room's historic character.







Figure 62. Market Fireplace (ca. 1983). This photograph pre-dates the 1983 remodeling of the Fireside Lounge (room 100)--the bar has yet to be installed here. A clear view is provided of knotty pine paneling, wainscot and the large stone fireplace. Also of note, is the southeast corner where plywood patches are present at the wainscot and floor due to material decay (see Appendix A for investigation findings in this corner). Notice, too, that 1975 fluorescent fixtures are still present and have not been replaced by the current electrified gas lamps (see figure 61). (HABS #CA 2148 B-7).







Figure 63. Market Room 102 (5/86). These views show the light and airy quality of room 102 with its array of windows and verticle paneling (3/8" x 11-3/4") painted white. The left view shows the doorway and window communicating with room 101 (the store). In the right view, the ceiling joists are exposed; fiberboard panels define the ceiling. Knotty pine was never installed on the ceilings in this room. Notice intrusive character of fluorescent light fixture.







Figure 64. Market Room 111 (5/86). At right is the plywood finished walk-in cooler serving the lounge-half of the market. It dates to about 1946. At left is a staff lavatory with painted plywood wall finish behind.







Figure 65. Comfort Station, View from West-Northwest (ca. 1983). Significant NPS-rustic style characteristics are visible here: stone foundation, exposed timber frame of 8x8s, shake siding, and braked gable roof. Note, sloped access walkways are treacherous this time of year. The overhanging roof provides good protection to entries at each end. (HABS #CA 2148 C-1).



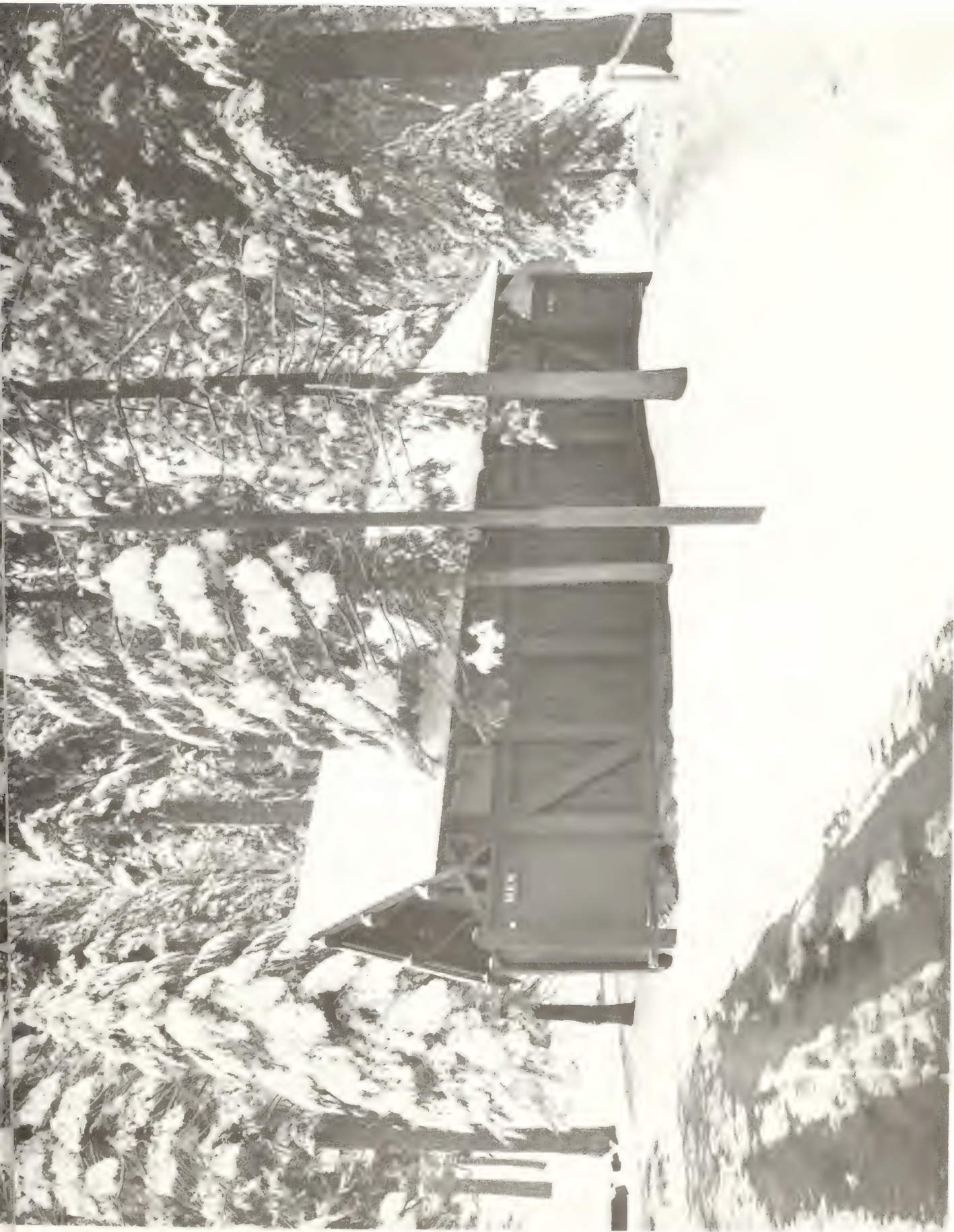




Figure 66. Comfort Station, North and East Facades (5/86). The wood shingled roof with double coursing is significant in these views. Notice, site grade piles up at foot of building from service road. Notice, also, inconsistent glazing pattern in view of men's side.







Figure 67. Ranger Residence, View from Northeast (ca. 1983). The stylistic simplicity of the residence is clear in this view within its rhythm of horizontal lap siding and verticle exposed framing and board-and-batten gable end. Of equal importance is the deeply raked stone foundation. (HABS #CA 2148 E-1)







Figure 68 (left). Ranger Residence, View from West (10/86). At left is the front entry to the residence; it is not used much today. The stone chimney is one of the most distinctive exterior features. The snow tunnel and garage are off to the right.

Figure 69 (right). Ranger Residence Site (10/86). Although on a hill overlooking the village (out of view, left) the residence is well blended and hardly noticeable in its natural landscape. The walkway, with stone and timber steps is in need of preservation.







Figure 70 (left). Ranger Residence and Garage (10/86). This view, looking down at both structures, shows their spatial relationship--connected by the snow tunnel--and their stylistic, and material compatibility. The roof extension shed on the garage was added about 1984.

Figure 71 (right). Ranger Residence Snow Tunnel (5/86). This view shows the make-shift snow tunnel connecting the residence (at left) with the garage. The board-and-batten shed roof addition on the rear of the residence was built in 1953. The shed roofed closet attached to the rear of the garage houses storm sash/screen sash for the residence but was originally built in about 1953 to house LP gas tanks.







Figure 72. Ranger Residence Fireplace (ca. 1983). This interior view--prior to 1983 rehabilitation--shows the distinctive fireplace and dark stained pine flooring. Electrical work included grounded wiring in 1983. Except for the installation of a fire detection/warning system and GFCIs in the bathroom and kitchen, no interior work is recommended for the ranger residence (HABS #CA 2148 E-7).







## MARKET DESCRIPTION

The market, constructed in 1928-29, is an exposed squared timber post and beam structure with 1x8 shiplap siding nailed to the interior side of the wall frame. The main portion of the building is an eighty-foot by twenty-one foot, low gable-roofed hall with each end flanked by a twenty-by twenty-eight foot gable-roofed wing. A stone fireplace was added to the south wing in 1930, and in 1938 the rear of the north wing was extended twenty feet and an eighty foot long shed-roofed addition replaced a smaller lean-to addition, which had been installed in the early 1930s on the east side.

Fenestration changes occurred in 1930-31 and again in the late 1930s and have resulted in interruptions in the original post and beam structural order (see HABS Drawing sheet 2 and appendix H), but continued the original stylistic character. An original shed dormer, large multipane fixed windows with operable transoms, and double crossbucked and herringbone paneled doors that were added in 1930-31 are significant features of the west or front facade. Similar large multipaned windows dominate the south wall of the lounge and also date to 1930-31. Windows in the remaining facades are products of the 1938 changes and are generally smaller units with multiple panes and most are now covered with plywood or boards for security reasons and for protection from snow loads.

The shake roof, which included wood shingled portions after 1938, was covered with aluminum sheet roofing in 1975 as a temporary repair and expedient means of snow management. The building is maintained by a concessionaire, Guest Services, Inc. A paint color scheme of brown with green trim for the windows has been used for years. (A paint analysis has been done, and additional discussion of the roofing is included for all three buildings in appendix G.)

The original interior has 1x4 pine tongue-and-groove stripflooring. The public rooms--the store (room 101) and lounge (room 100)--were finished in the 1930s with 1x8 knotty pine tongue-and-groove v-notch paneling on



the walls and ceiling. This is complemented by a wainscot, to window sill height, made of 3/8" x 11-3/4" knotty pine boards (orange crate wood). The use of knotty pine paneling is cited in the National Register significance statement. However evidence suggests it was installed after original construction as part of remodeling either between 1930-32 or in 1938.

Notable elements in the lounge include several gas converted-to-electricity light fixtures and the large stone fireplace. The large sequoia-redwood bartop is a handsome but recent (1975-1983) addition.

The large room of the original north wing (room 102) has the earliest interior finishes found in the building, which were probably installed by May 1929 when the store opened. The walls in this room are finished with vertical 3/8"x11-3/4" boards (orange crate wood) with a 7/8"x7" baseboard, and the exposed ceiling joists support fiberboard panels. Walls and ceiling are currently painted white. The remainder of the original north wing is divided into small storage rooms (rooms 104 and 105) and an office (room 103) which probably post date 1938. They are finished similar to the large room or are simply exposed 2x4 (1-7/8"x3-5/8") studs.

The addition to the market that was made in 1938 included two distinct components and should be thought of as 'two' additions. One part extended the length of the north, gabled roofed, wing to the east about 20 feet. This building extension cut into the hillside and requires a step-down of nearly four feet at the rear loading doors. The second component is a 12-foot wide shed roofed addition paralleling the main building hall and running 80-feet long. In terms of exterior appearance, the additions are entirely compatible and although a product of their own time (9 years after original construction) have become an integral part of the building.

The two 1938 rear additions (including rooms 106 through 112) have concrete floors and exposed concrete walls at the lower half. The wall area above the concrete walls is finished with horizontal 1x8 shiplap siding identical in appearance to the original exterior building walls.



Other wall finishes in these storage areas include some plywood, some unfinished exposed framing, lap boards and include the former exterior 8x8 frame rear wall of the original main building. The shed roof rafters and roof sheathing are exposed except in the liquor storeroom (room 112), which has a painted plywood finish.

The large walk-in cooler (rooms 109 and 110) which serves the market and lounge was probably installed in 1946 and is clad with varnished plywood.

Additional descriptive information is provided in the structural, electrical and mechanical reports of Appendices B, C and D.

#### COMFORT STATION - DESCRIPTION

The comfort station was constructed in 1932, and is an exposed, squared timber post and beam structure.

Each elevation is diagonally braced at the corners and the wall panels between the 8x8 posts (or puncheons) are shingled with 5/8"x5½" shakes (rough split untapered boards about 34" long). False, bracketed lookouts are at the eaves of the wood shingled, gable roof. Every sixth course of shingles is doubled although the fifth course was specified originally, and the roof was once painted green but now very little paint is left on the shingles. The rest of the building is painted brown which covers earlier layers of green on window sash and doors. Wood privacy screens protect the restroom entries.

The rectangular building contains two restrooms and a 2'-6" x 13'-0" service area (room 101) between. It rests on a foundation of local granite set in cement mortar, which is in good condition. The exterior has been minimally impacted and little changed since construction, except for accretions of utility hook-ups and meters on the south elevation and window glass replacements, which have resulted in a mixture of pane types.



Interior alterations have been more extensive. The original concrete floor and hopper windows at ceiling height, some with the historic ripple glass, still exist. Also, original 1x6 tongue-and-groove v-notch paneling on the walls and ceiling is visible in the service area where the walls have not been refinished and framing is exposed. This paneling may exist in each restroom beneath the current wall and ceiling finish, which is painted, 3/8-inch thick formica paneling, probably installed in the 1960s. Electricity was not provided, originally.

Restroom fixtures are nonhistoric, are white, and were installed about 1964 in the men's room. The fixtures in the women's room are probably of the same vintage. The stall partitions are not original though the wooden partitions in the women's restroom are of an earlier design than the metal partitions in the men's restroom. Lighting in both rooms is provided by a circular fluorescent fixture, probably dating to the 1960s remodeling. Heat is provided by an electric furnace installed about 1984.

#### RANGER RESIDENCE/GARAGE - DESCRIPTION

The ranger residence/garage is maintained and occupied as quarters by park personnel. It was built in 1931 and is a one-story, squared timber post and beam structure with horizontal 1 x 12 lapped siding (10½" to weather) as wall panel in-fills. The gable roof is wood shingled with a 3'-0" width of sheet metal snow flashing at the eaves. The main portion of the building rests on a foundation of local granite set in cement mortar. A small enclosed service porch (room 110) with a concrete foundation was added at the rear entry in about 1953.

A detached, single car garage with storage space and workbench area is behind and uphill approximately 30 feet from the house. The garage is of wood frame construction with exterior lap siding and unfinished exposed 2x4 frame interior walls. It rests on a concrete foundation and has earth and partial asphalt floors. The wood shingled roof was extended beyond the building on the east side to provide dry shelter for firewood in about 1984.



The garage and house are connected by a wood frame snow tunnel of recent design, originally a temporary structure but now "permanent." Also, a patio with granite retaining walls and fireplace and concrete floor is adjacent to the rear of the house. A small section of a retaining wall of local stone, which used to run along the back of the house, still remains standing.

Features of the house include pine strip flooring, a large fireplace and chimney, also of local granite set in cement mortar, the original casement windows, and recently installed sheetrock on some interior walls. According to original specifications, its roof, walls and window trim were to be painted to match other buildings. Presently, the ranger residence roof, which is probably not original, is unpainted and window trim is beige. Walls are painted brown.

#### Summary of Architectural Values

Because of their architectural significance within the Giant Forest Village/Camp Kaweah Historic District, the three buildings have elements that are of particular cultural value and these should be retained and protected. These elements may be part of the original construction or may be products of the buildings' evolution, such as additions, and consequently have become features of the buildings' characters.

Of common importance to each building and so stated in the National Register statement of significance is exterior appearance. The facade elements, their color and their arrangement and pattern within the facade contribute to the architectural significance and consequently need to be protected. Such elements include roof line and material, windows, doors, exposed structural members, wall skin, and stone chimneys. The primary objective is to retain and preserve the overall existing appearance of the major facades of each building and duplicate historical paint color.



There are elements specific to each structure that warrant protection. The following is a list of significant features by area of concern.

### Market

Exterior wood walls and shake roof, brown and green respectively  
exposed squared timber frame pattern of 8x8s, 8x12s, etc.

fenestration pattern

brown and green wall color scheme (see Appendix G for Munsell color designation)

the entire entry facade and south elevation of the south wing are most significant

the dormer and chimney are important features

window and door design (light arrangement, size and built-up doors of diagonal patterns, exposed strap hinges, and elemental dimensions) are also aspects of facade integrity

the north and east facades (except the east facade of the south wing) and the west facade of the south wing are products of the 1938 or later remodeling and are, therefore, the least significant facades although this work was accomplished in a compatible style

Interior architectural features and materials, apparently, are the product of 1928 construction in the case of wooden floors, 1930 addition in the case of the stone fireplace area and most fenestration patterns, and 1930/32 or 1938 in the case of most wall and ceiling materials (knotty pine, etc.), final fenestration, and the rear additions.



Later remodeling including some wall partitions, built-in coolers, bar counter, heating and plumbing equipment, electrical system, metal roofing, and loft storage spaces which are of little significance. Therefore, the most significant materials are the strip flooring and stone fireplace area of the 1928-30 period, then secondly, the finish materials and fenestration patterns of 1930/32 or 1938. Features and equipment installed after since 1938 are, generally, modern accretions. In terms of historic architectural and cultural values it seems appropriate to consider most of the interior plan as possessing little integrity (except wood floor, fireplace, and wall and ceiling paneling) and of far less significance than the exterior, which clearly manifest the original integrity of the NPS-Rustic style.

### Comfort Station

The entire exterior, every element, all fenestration, material, and color is intact and significant except (1) modern electrical/telephone service accretions, (2) vent stacks and cleanouts that may or may not be original, (3) glazing, which is a mixture of original and later replacements and (4) in recent years, window sash and doors have been painted the same as exterior walls, although the original was green. Except for work dealing with these exceptions all exterior treatments should preserve or duplicate existing. One other consideration is the fact that the roof has probably been replaced since 1932 and may not be an accurate duplicate of the original shingle pattern (5-course doubled), and its paint is mostly worn away.

Unlike the exterior, the interior possesses little integrity. Few of the interior features such as finish material, color, fixtures, piping, or stall partitions are original to the building. Original features include: (1) the concrete floor, (2) the window sash, (3) the historic tongue-and-groove paneling still (at least partially) extant behind new finish material, and (4) the walls and ceiling of the



utility chase (room 101) both finished and unfinished as it was originally built. Fixtures and accretions--including telephone switching panel, electrical system, formica wall finish, toilet stalls, fixtures, and heating system--in this space are non-historic additions since original construction.

#### Ranger Residence/Garage

The exterior is little changed and largely intact. All materials, features and fenestration are original and significant to the NPS-Rustic style except (1) air lock/mud room (room 110) addition on the rear, done in a compatible style about 1953; (2) the accretion of an array of electrical, telephone, and radio system equipment; (3) the "temporary" snow tunnel construction, an incompatible intrusion; (4) the addition of and/or structural upgrading of trails, driveway, and patio area which were done at undocumented times but are generally compatible and could be preserved as is; (5) modern paint on window sash and trim is no longer the original green; and (6) the roofing is probably second generation.

The interior is largely intact and spatially as originally built except for the enclosed porch/mud room addition. However, rehabilitation has been accomplished over the years including new wall surfaces, plumbing and electrical systems, and most likely color schemes. Of particular significance on the interior is the spatial plan, wood strip floors, fenestration pattern, and fireplace. Because little work is anticipated on the interior and few deficiencies identified except for the need to install a centrally monitored fire detection/warning system through the attic and GFCIs in the kitchen and bathroom, a detailed assessment of the interior was not made. Likewise, because no work is proposed for the garage except for installation of GFCI's, little evaluation of significance/impacts was conducted.



## Landscape

Market. There is little if any original landscape integrity, the area on all sides of the market has changed several times since 1928. Some of those changes include:

The front walk has increased in elevation several inches over the years as a result of being paved with asphalt.

The original front walk curbing was changed from logs to stone (a compatible solution) in about the 1940s.

Entry steps and stoops on the front (west) have changed several times from small steps or ramps at several doors to a larger porch structure at the north wing (ca. 1984) and includes an asphalt covered earth ramp at the store entry.

The grade at the south elevation has increased about 12 inches since 1928 and the area to the south has been changed from an open field to a wooded glade after tree planting in about the 1930s.

Behind the market a series of changes have totally altered the original site approximately as follows:

1928/29--immediate grade probably established at about floor level than steeply sloped up away from building;

early 1930s--chimney added and first rear shed and loading dock added; the result was the cutting back of the grade and installation of a retaining wall to hold the steep site and installation of an access road behind the market to reach the loading dock;

1938--a further cutting back occurred to widen the bench to enable construction of the existing north wing addition and larger shed addition; this was accomplished by incorporating a retaining wall as the new rear wall of these additions and establishing grade along the



rear at three to four feet above floor level sloping down to about floor level at the southeast corner;

since then this grade, due to erosion and build-up, possibly associated with an improved service driveway after 1942, has risen about two feet; also other structures have been built and replaced along the back of the market including the extant refrigerator building (ca. 1984).

This evolution of changes is not well documented but it can be concluded that the immediate market site is no longer like it was originally; there is no integrity to be preserved.

Comfort Station. Three things have happened to the site of the comfort station since it was built in 1932:

ca. 1932--the walkway to it replaced a former service driveway and this walk has since been altered by removal of the log curbing and installation of pipe railing;

after 1930s--the largely open space into which the comfort station was built has become a wooded glade composed of a few large trees and a forest of saplings.

post 1942--a service road was built behind the comfort station, which probably resulted in the modification of the bench area upon which it was built to a shape similar to current grade, except, due to erosion and build-up, the grade at the southeast corner is now some 6 to 10 inches higher than as originally established and it is now at an elevation touching the wooden sill plate;



Ranger Residence/Garage. The larger ranger residence/garage site is less developed than that of the market and comfort station. It is more historic in character with its big trees and open understory. The patio and fence, however, are likely later additions. The stone retaining wall at the southwest is probably original and a significant feature of the site; it has, however, partially fallen down.







# LEGEND

- BOUNDARY
- COUNTY LINE
- RIVER
- GRAVEL ROAD
- PAVED ROAD
- HQ. HEADQUARTERS
- V.C. VISITOR CENTER
-  RANGER STATION
-  CAMPGROUND

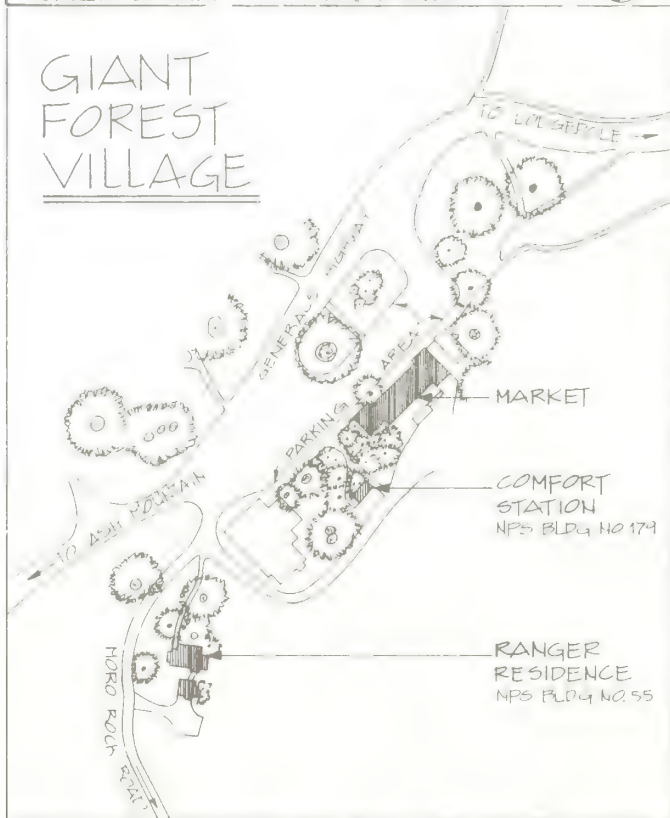


THIS PROJECT  
ANT FOREST VILLAGE



NORTHERN  
CALIFORNIA

## GIANT FOREST VILLAGE



SEQUOIA  
NATIONAL PARK

0 20 40 60 80 100  
SCALE OF FEET

HISTORIC AMERICAN  
BUILDINGS SURVEY  
SHEET 1 OF 12 SHEETS

SURV. NO.

GIANT FOREST MARKET, COMFORT STATION, RANGER RESIDENCE AND GARAGE  
SEQUOIA NATIONAL PARK, TULARE COUNTY, CALIFORNIA

NATIONAL ARCHITECTURAL AND ENGINEERING RECORD  
NATIONAL PARK SERVICE  
UNITED STATES DEPARTMENT OF THE INTERIOR

OR	DESIGNED	TITLE OF DRAWING		DRAWING NO.
	DRAWN 88	MARKET, COMFORT STATION AND RANGER RESIDENCE		102
	DRAFTING BR.	LOCATION WITHIN PARK		25,000A
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	DATE 12/87	NAME OF PARK		2000
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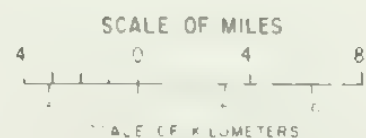


# LEGEND

- BOUNDARY
- - - COUNTY LINE
- - - RIVER
- - - GRAVEL ROAD
- == PAVED ROAD
- HQ. HEADQUARTERS
- V.C. VISITOR CENTER
- [Icon] RANGER STATION
- [Icon] AMFIRE BUILDING



# SEQUOIA NATIONAL PARK



# SYMBOLS

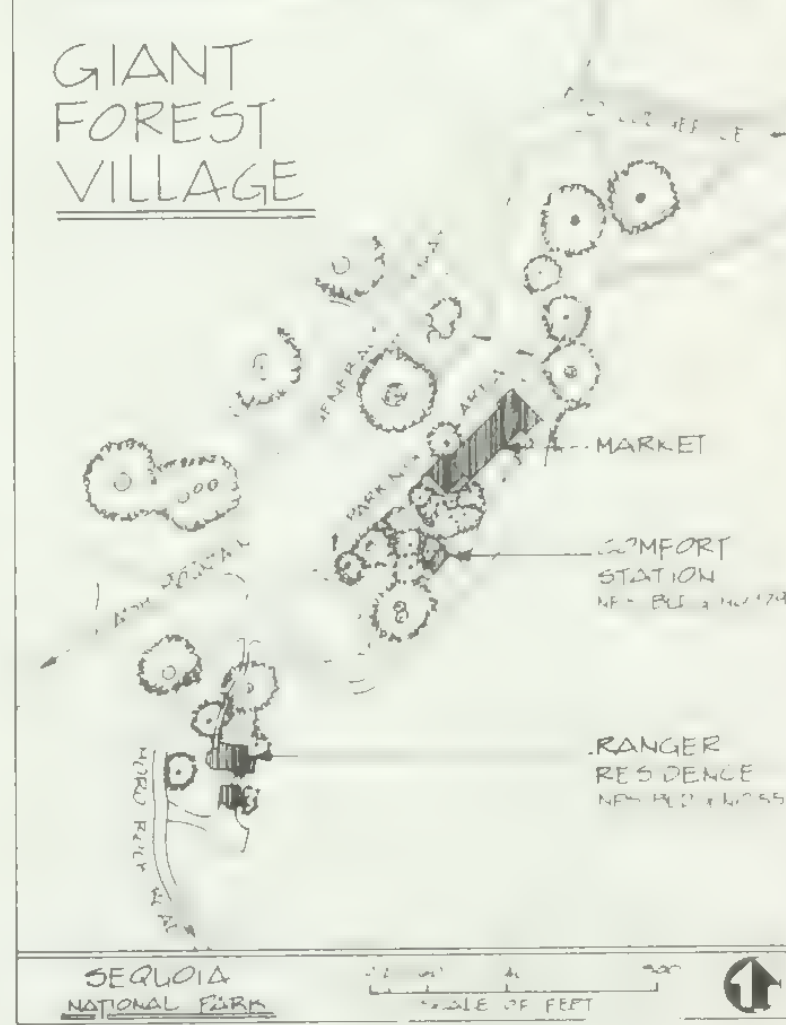
- [Icon] ASPHALT AND CONCRETE PLAN AND ELEVATION
- [Icon] CONCRETE DETAIL
- [Icon] EARTH RETENTION
- [Icon] TIE DETAIL
- [Icon] TILE (PLAN)
- [Icon] WOOD (SECTION)

# ABBREVIATIONS

- CA CIRCA
- CEC CEDAR
- CL CLOSET
- CONC CONCRETE
- DF DOUGLAS FIR
- EA EACH
- ELECT ELECTRICAL
- FOUND FOUNDATION
- FT FEET
- HA HANDICAPPED
- HP HIGH POINT
- INFO INFORMATION
- NO NUMBER
- NPS NATIONAL PARK SERVICE
- ON CENTER
- SEQ SEQUOIA
- SUGAR P SUGAR PINE
- TIC TECHNICAL INFORMATION CENTER
- TYP TYPICAL
- VP VALVE PIT
- AND

# INDEX

SHEET	TITLE OF SHEET
1	COVER-LOCATION
2	MARKET AND COMFORT STATION SITE PLAN
3	MARKET EXTERIOR ELEVATIONS AND SECTIONS
4	MARKET FLOOR PLAN
5	MARKET ELEVATIONS
6	MARKET ELEVATIONS
7	MARKET SECTIONS
8	COMFORT STATION PLAN, ELEVATIONS AND SECTIONS
9	COMFORT STATION DETAILS
10	RANGER RESIDENCE / GARAGE SITE PLAN AND ELEVATIONS
11	RANGER RESIDENCE PLANS AND DETAILS
12	RANGER RESIDENCE ELEVATIONS



Mark	Sheet	REVISION	Date	Initials
A	ALL	MINOR GENERAL REVISIONS	2/89	CLF

EXISTING
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DENVER SERVICE CENTER

DESIGNED
DRAWN
DRAFTING
REVIEW
DATE

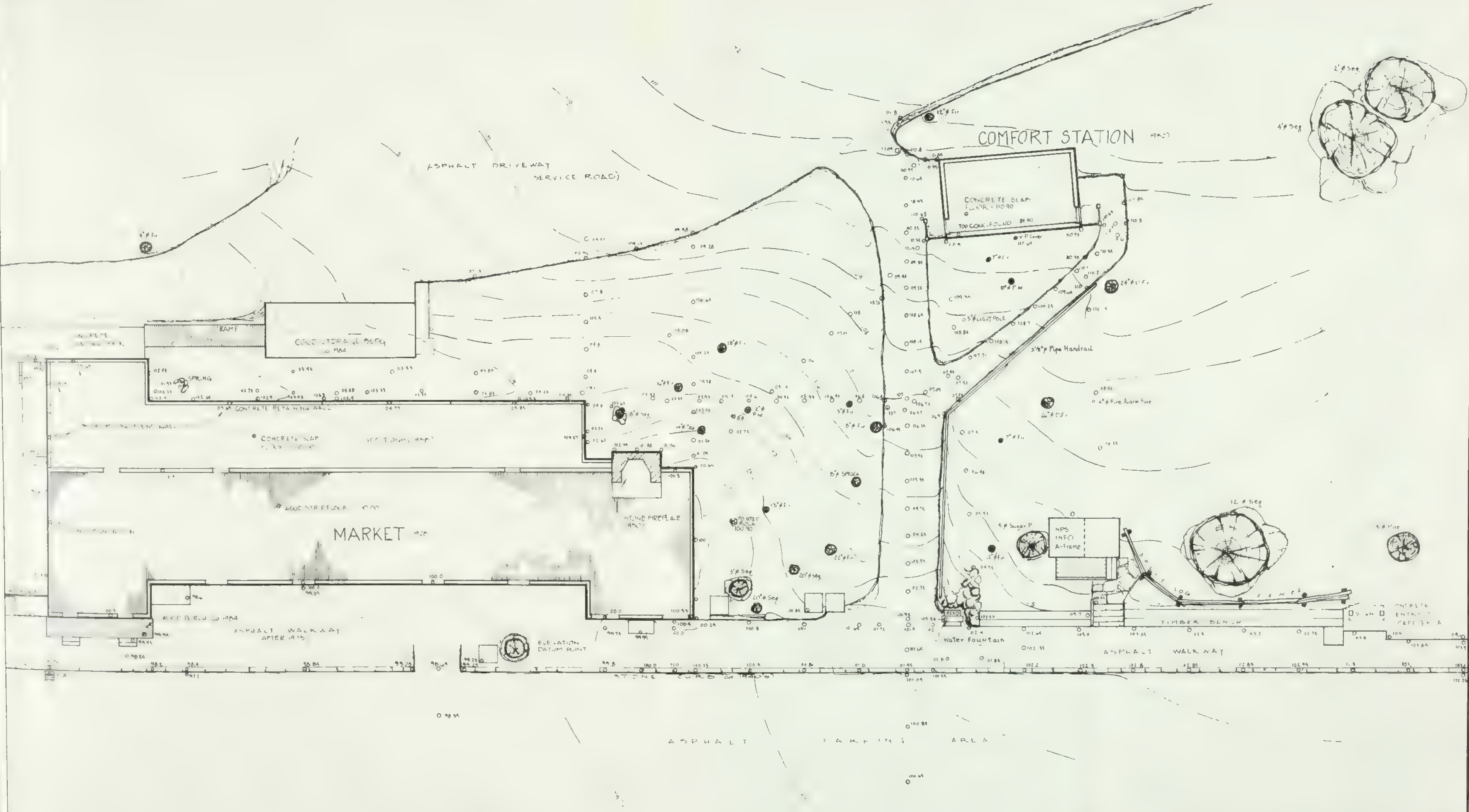
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LOCATION WITHIN PARK
GIANT FOREST VILLAGE
NAME OF PARK
SEQUOIA NATIONAL PARK
REGION
WESTERN
COUNTY
TULARE
STATE
CALIFORNIA

SCALE
102
25,000A
PKG
NO
20
OF
12









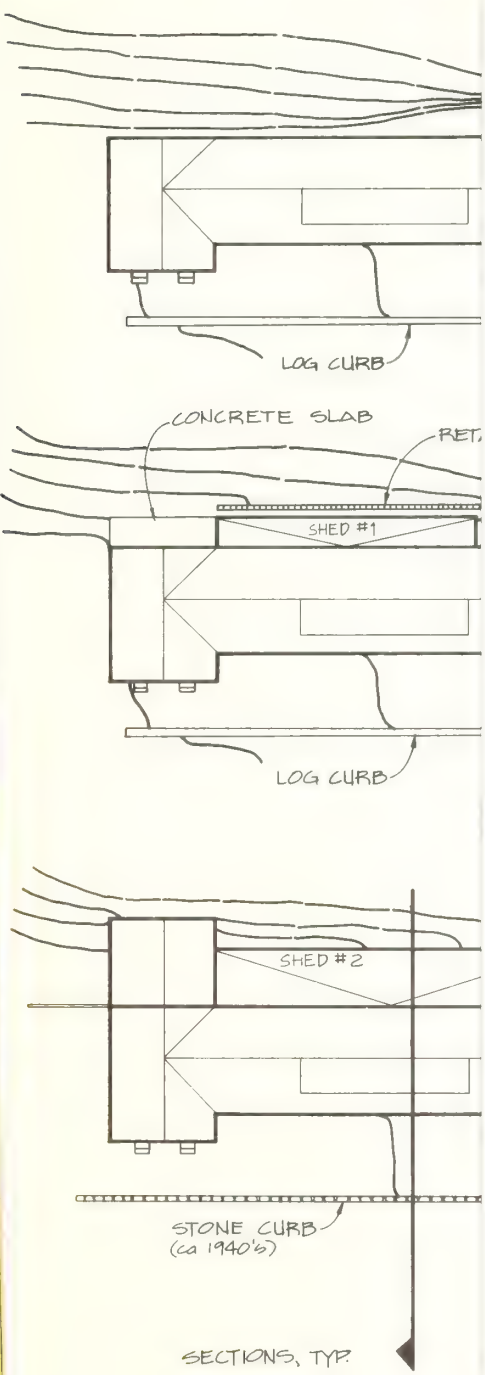
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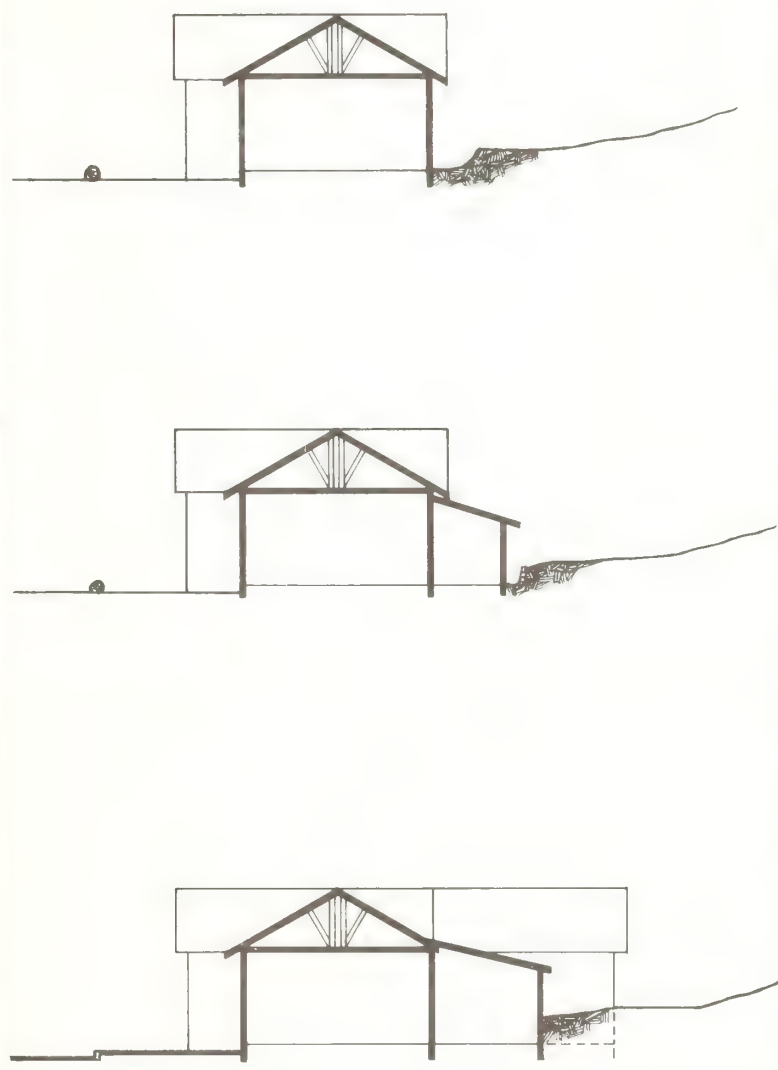
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TECH. REVIEW			25,000A
DATE			PKG NO.
12/87			2000
			SHEET
			2
			OF 12

NOTE: THE DATA SHOWN HEREIN ARE EXTRAPOLATED FROM POINT ELEVATIONS SHOWN. ELEV. READINGS & FEATURE MEASUREMENTS BY FRAZIER, KENNEL & SILVA 9/86 & 10/86





PLAN

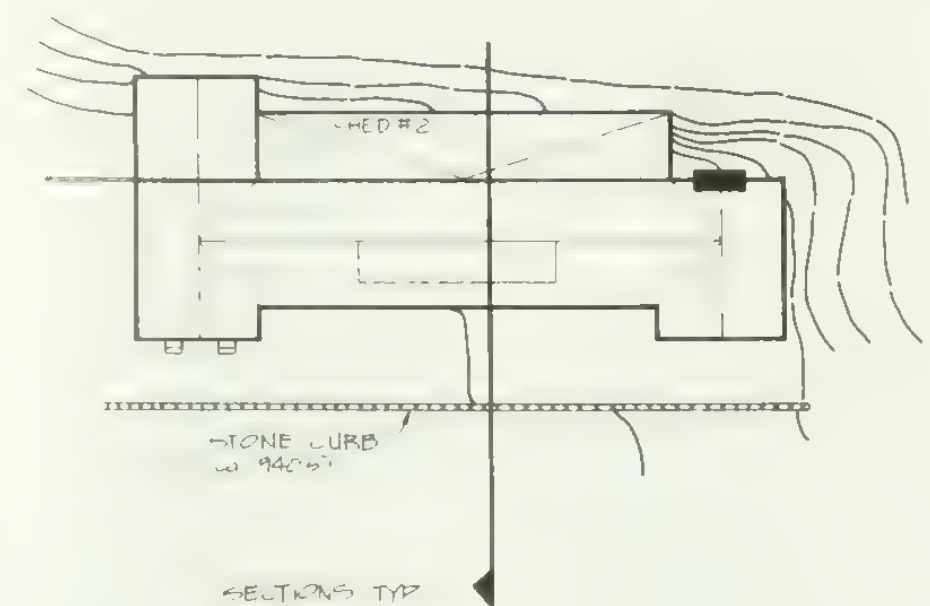
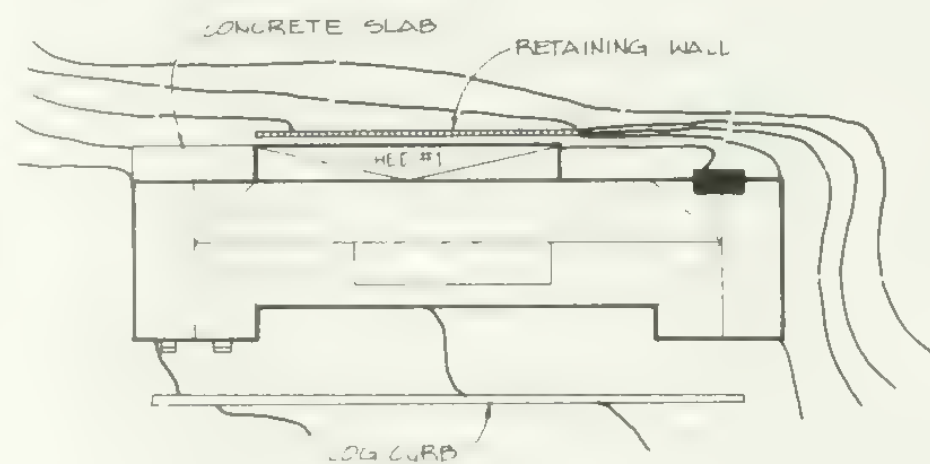
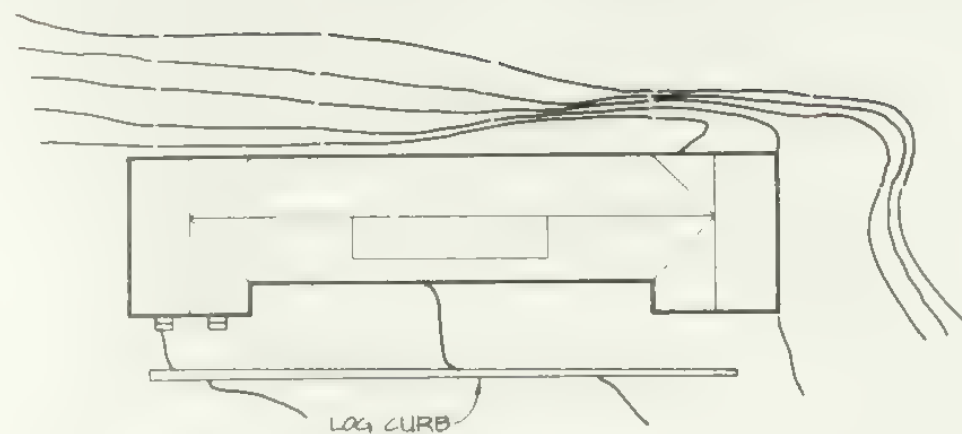


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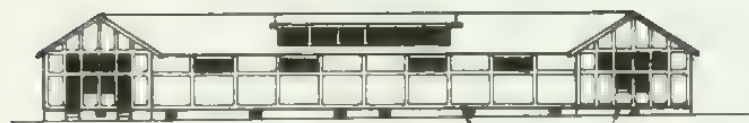
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NO.	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
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REVIEW		EXTERIOR EVOLUTION	25,000A
		1928 - 1938	SHEET
			3
			OF 12





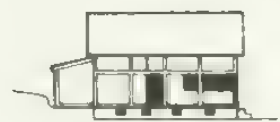
PLAN



1928-29

NO DOORS

INITIAL CONSTRUCTION OF ORIGINAL BUILDING  
INTERIOR REMAINS LARGELY UNFINISHED.



1930-32

- CENTER DOOR

COMPLETION OF INTERIOR OF STORE  
COMPLETION AND REMODEL OF SOUTH WING  
FOR WINTER LOUNGE WITH FIREPLACE  
CONSTRUCTION OF SHED ADDITIONS AT REAR (1930's)



1938

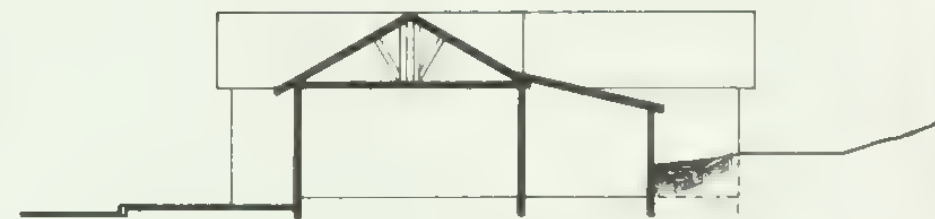
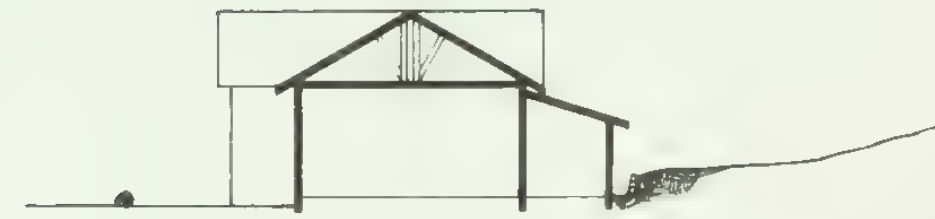
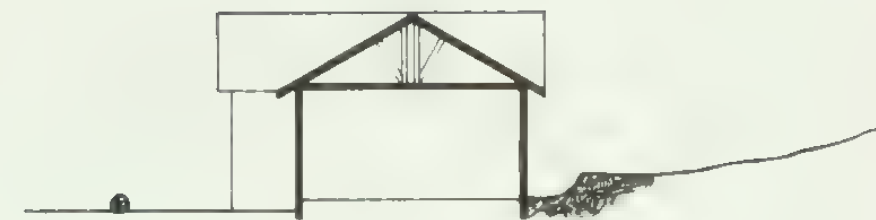
- TWO DOORS

REMODEL OF SOUTH WING LOUNGE  
REMOVAL OF 1930's SHED ADDITIONS AND  
CONSTRUCTION OF NEW LARGER SHED ADDITION  
EXTENSION OF NORTH WING AT REAR AND  
REMODEL OF ORIGINAL NORTH WING AREA.

NORTH

WEST  
ELEVATIONS

SOUTH

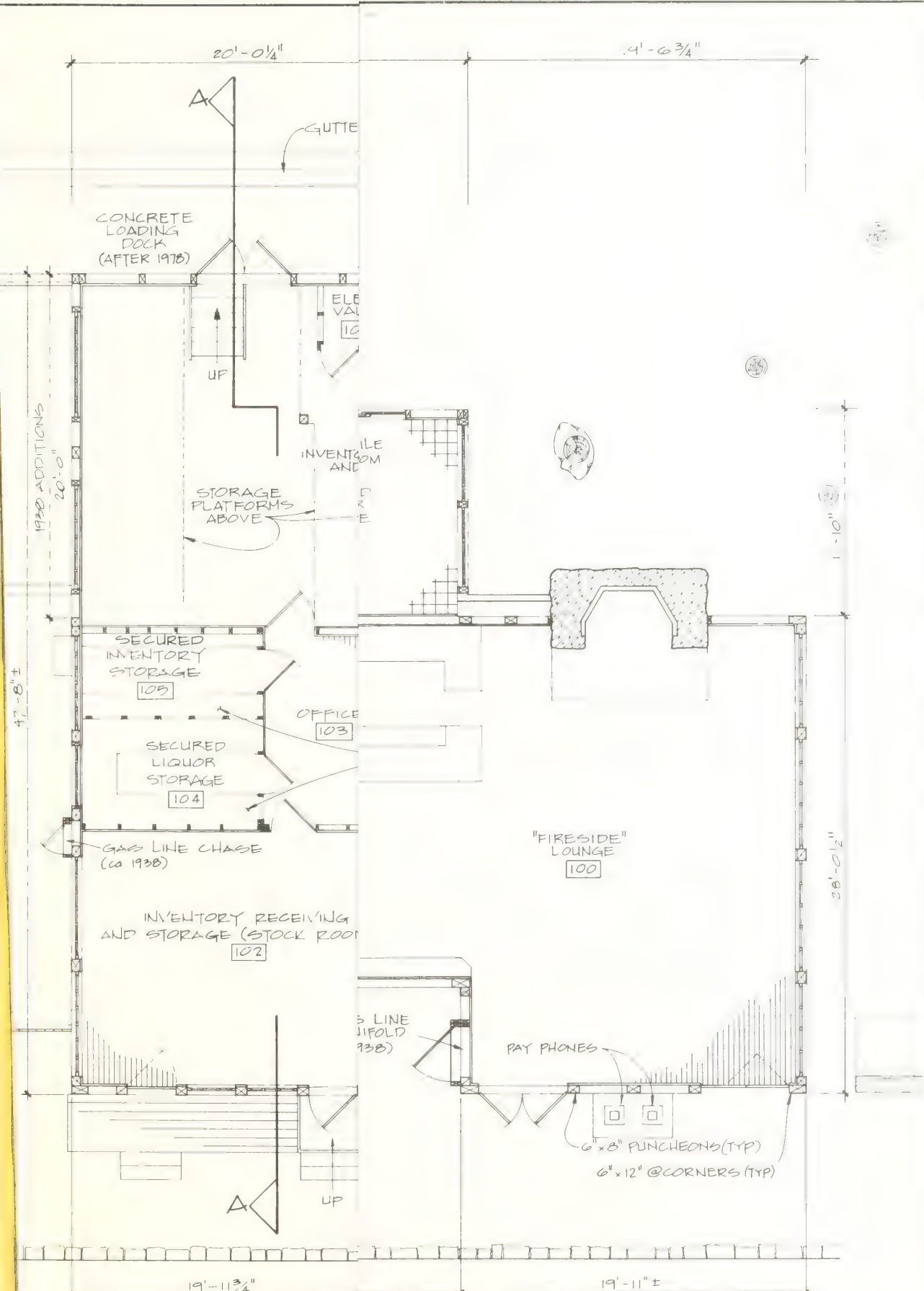


SECTION

DATA CONFIGURATIONS BASED ON HISTORIC PHOTOGRAPHS AND HISTORIC DRAWINGS (PARK FILES AND T.C.) AND PHYSICAL EVIDENCE. EAST (REAR) ELEVATION AND INTERIOR DATA INSUFFICIENT FOR ILLUSTRATION PRIOR 1928 DESIGNED BY GILBERT STANLEY UNDERWOOD 928.

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DRAWN A.K.A. S. MYRE			PKG NO. 2000
TECH REVIEW			SHEET <b>3</b>
DATE 12/87			OF 12



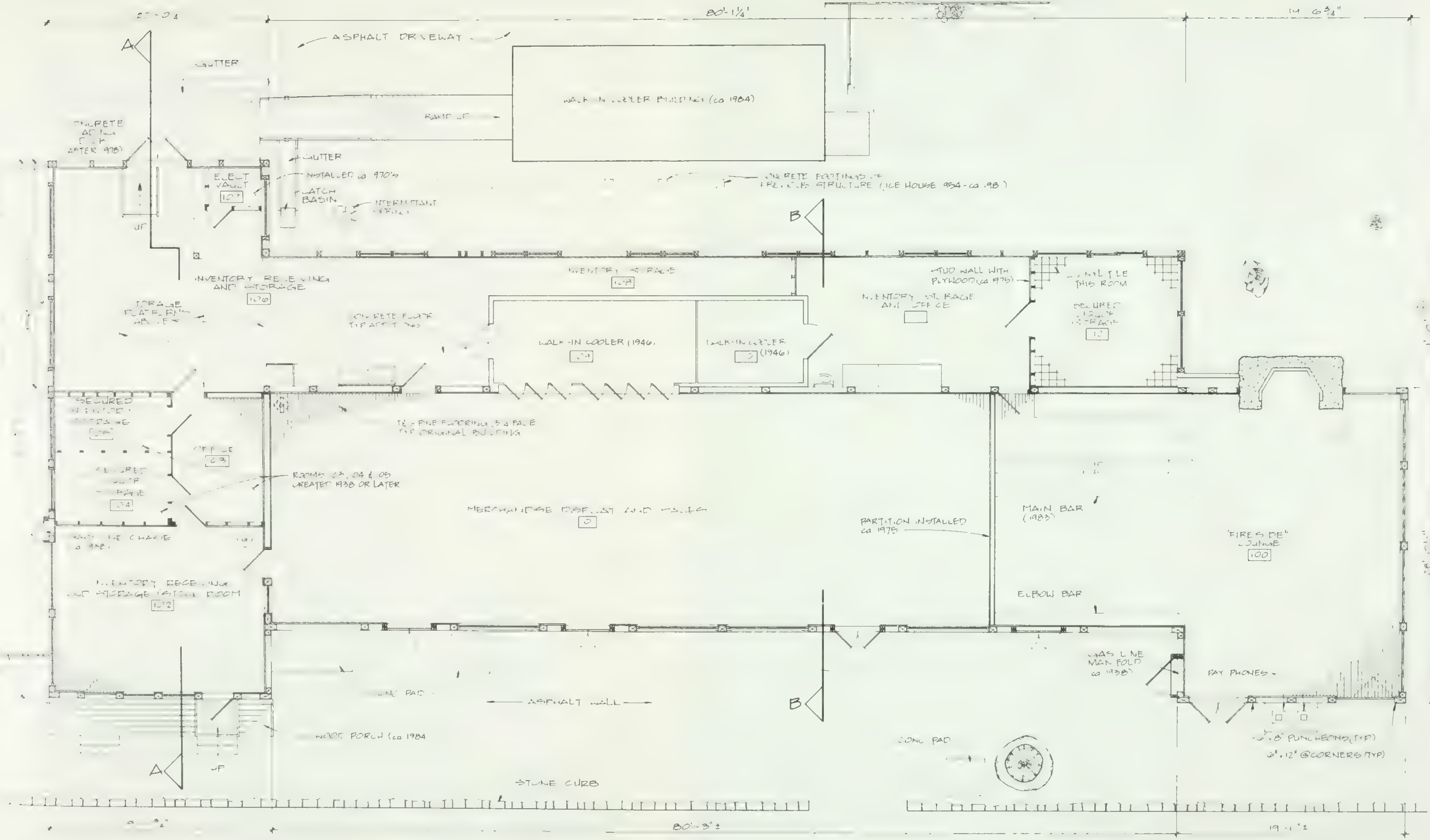


**NOTE**

ICE MAKING MACHINES, DISPLAY SHELVES, REFRIGERATED DISPLAY CASES, CHECK-OUT COUNTER AND FURNISHINGS NOT FIXED WITHIN THE BUILDING ARE NOT SHOWN.

SUB SHEET NO		TITLE OF SHEET		DRAWING NO	
		MARKET FLOOR PLAN		102	
				25,000A	
				PKG. NO.	SHEET
				2000	4
				OF 12	





**NOTE**

1. MAKING MACHINES DISPLAY SHELVES REFRIGERATED DISPLAY CASES THE CUT COUNTERS AND FURNISHINGS NOT FIXED WITHIN THE BUILDING ARE NOT SHOWN

**LEGEND**

- INOPERATIVE DOOR
- GAS HEATER AT CEILING

SCALE 1/4" = 1'-0"



DESIGNED	—
DRAWN	MENKE
TECH REVIEW	—
DATE	12/87

SUB SHEET NO

TITLE OF SHEET  
**MARKET FLOOR PLAN**

DRAWING NO	102
PKG NO	25,000A
SHEET	4
OF 12	





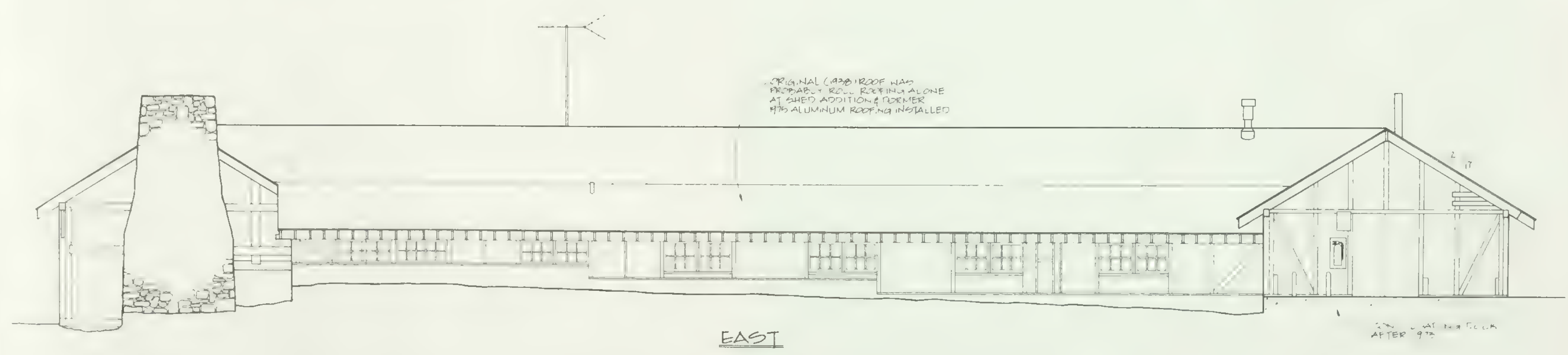
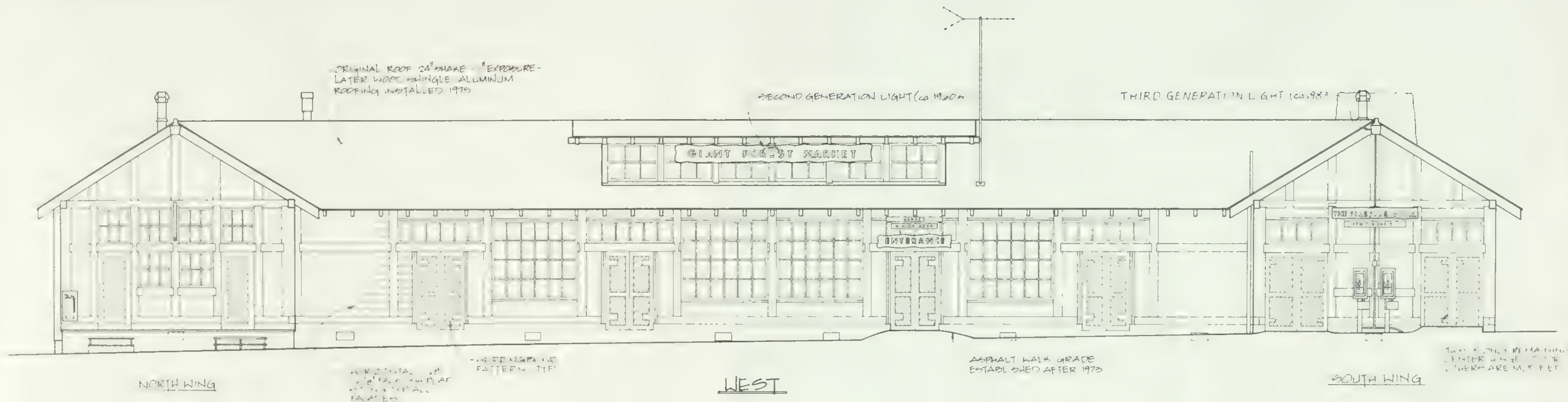
## SOUTH WING



OF 12

NTING OFFICE - 1985





SCALE 0 2 4 8 16 FEET

DESIGNIC	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN		MARKET ELEVATIONS	102
MEHREL			25,000A
TECH REVIEW			PKG NO
DATE 12/07			2000
			SHEET
			5
			OF 12



GENERATION  
(ca 1980)

ACKET (ca 1980's)

LOCATION

TO NORTH WING

ED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
SM		MARKET	102
IKEL		ELEVATIONS	25,000A
REVIEW			PKG NO. 2000
			SHEET 6
12/07			OF 12

NATIONAL ARCHITECTURAL AND ENGINEERING RECORD  
NATIONAL PARK SERVICE  
UNITED STATES DEPARTMENT OF THE INTERIOR

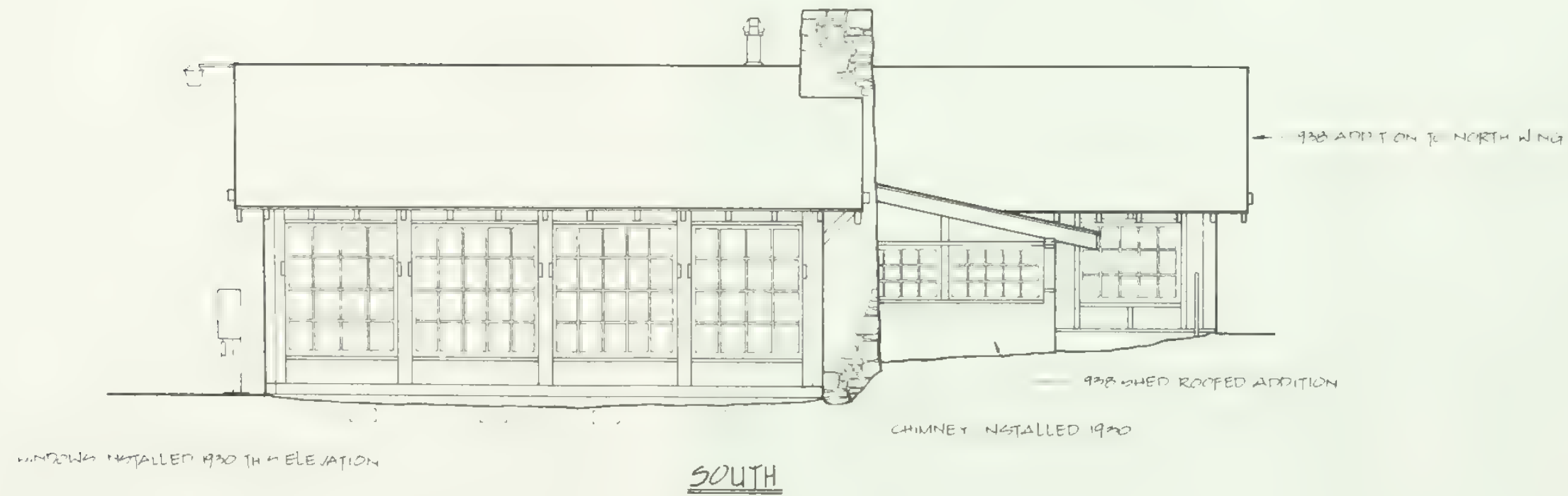
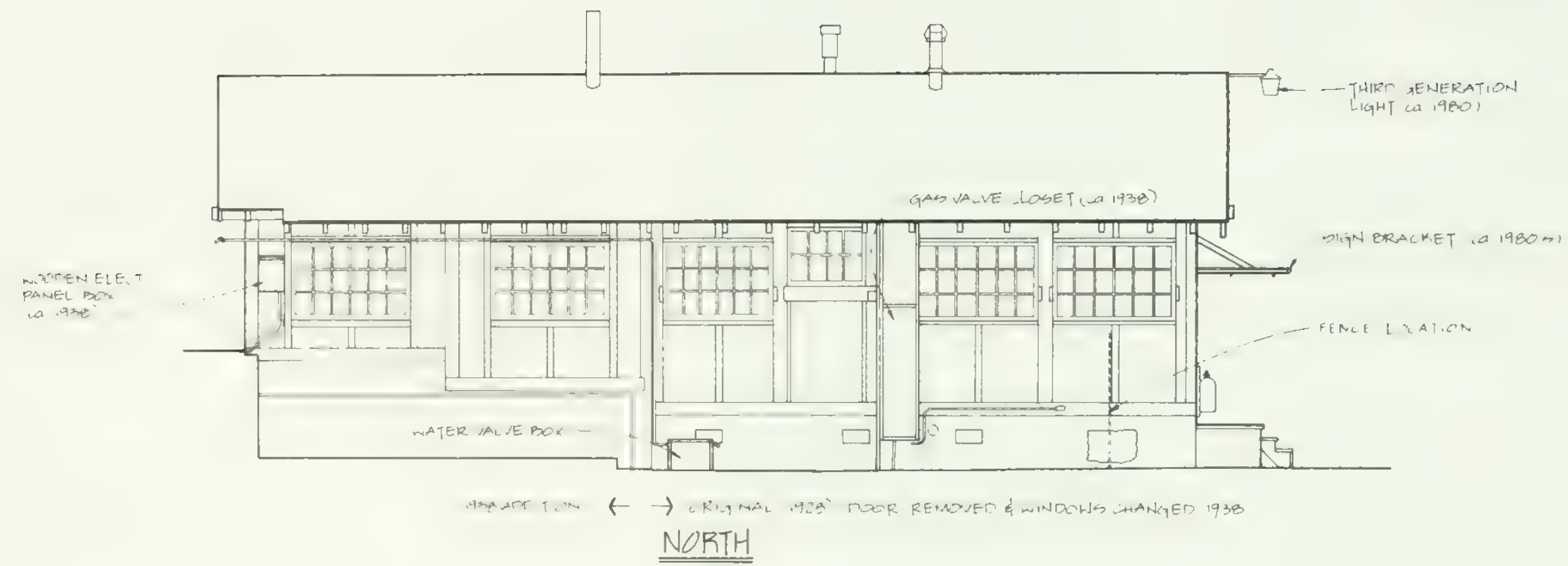
GIANT FOREST MARKET, COMFORT STATION, RANGER RESIDENCE AND GARAGE  
SEQUOIA NATIONAL PARK, TULARE COUNTY, CALIFORNIA

SURVEY NO

HISTORIC AMERICAN  
BUILDINGS SURVEY  
SHEET 6 OF 12 SHEETS

SHEET 6 OF 12 SHEETS





SCALE 1/4" = 1'-0"

DESIGNED	SUB SHEET NO.
DRAWN BY	
KENNEL	
TECH. REVIEW	
DATE 12/01	

TITLE OF SHEET  
MARKET  
ELEVATIONS

DRAWING NO.	102
	25,000A
PKG NO.	
SHEET	6
OF	12



DRM (ca 1970's)

3 OF EXTERIOR WALL  
INTERIOR TYP IN ADDITIONS

RETE LOADING DOCK (AFTER 1973)

ED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
sm		MARKET	102
IKEL		SECTIONS	25,000A
REVIEW			PKG. NO. SHEET
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12/07			OF 12

NATIONAL ARCHITECTURAL AND ENGINEERING RECORD  
NATIONAL PARK SERVICE  
UNITED STATES DEPARTMENT OF THE INTERIOR

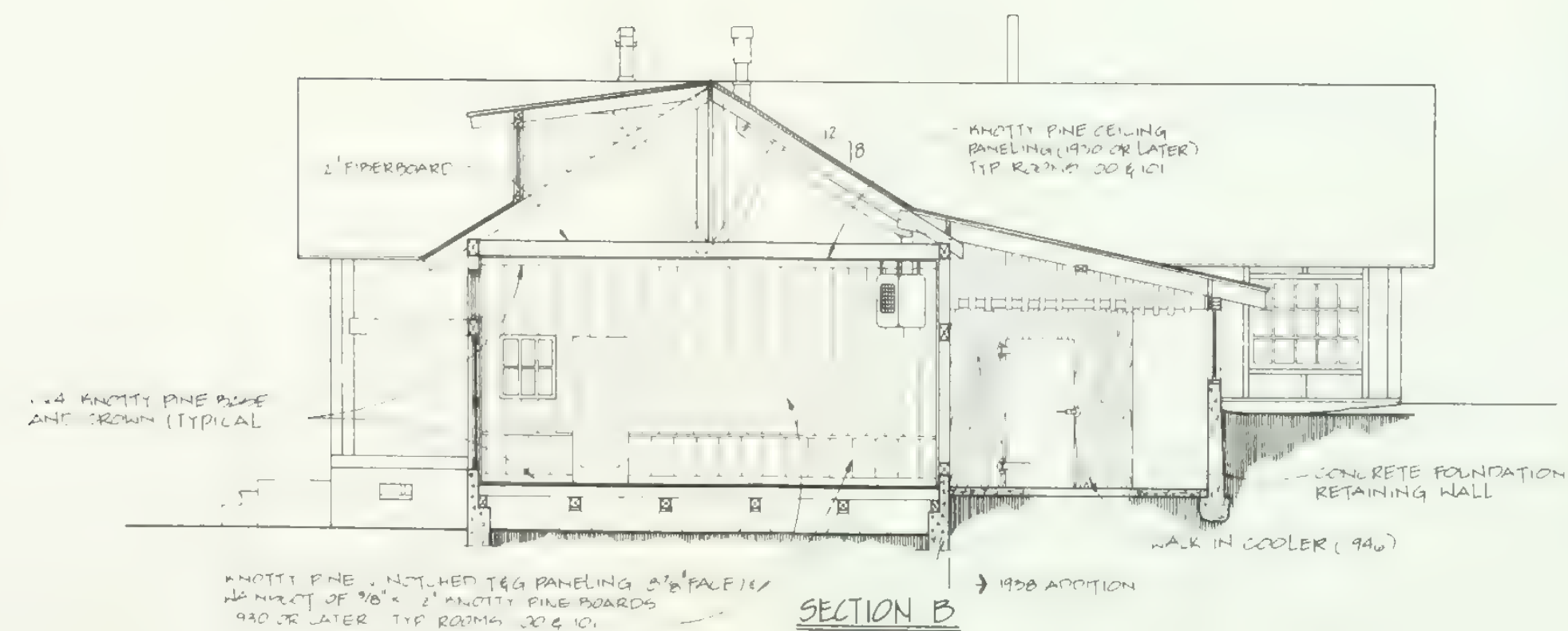
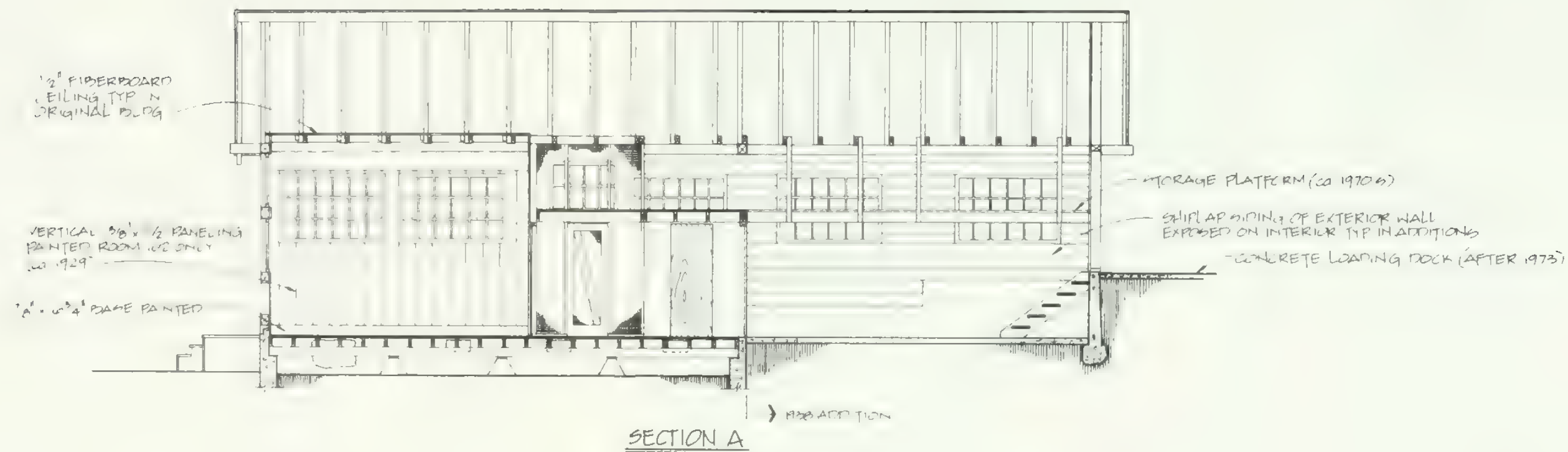
GIANT FOREST MARKET, COMFORT STATION, RANGER RESIDENCE AND GARAGE  
SEQUOIA NATIONAL PARK, TULARE COUNTY, CALIFORNIA

SURVEY NO

HISTORIC AMERICAN  
BUILDINGS SURVEY  
SHEET 7 OF 12 SHEETS

DEPT. OF THE INTERIOR  
NATIONAL ARCHITECTURAL AND ENGINEERING RECORD





SCALE  
1/4" = 1'-0"

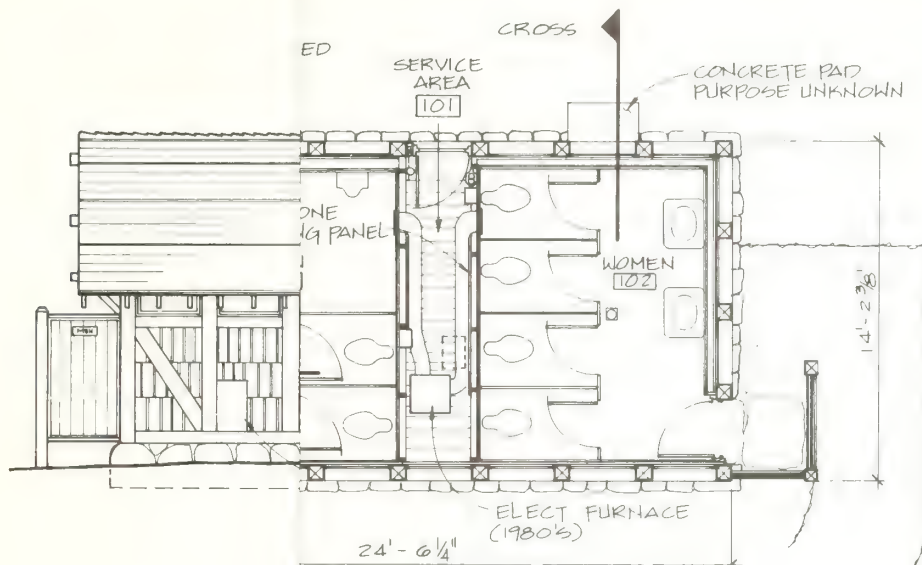
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DRAWN	
TECH. REVIEW	
DATE	

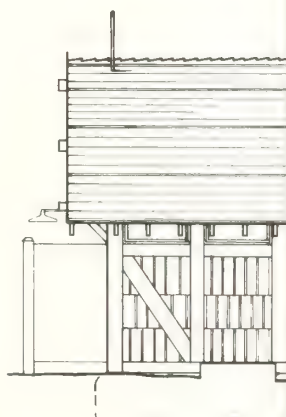
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MARKET  
SECTIONS

DRAWING NO.	102
PKG NO.	25,000A
SHEET	7
OF	12





## FLOOR PLAN

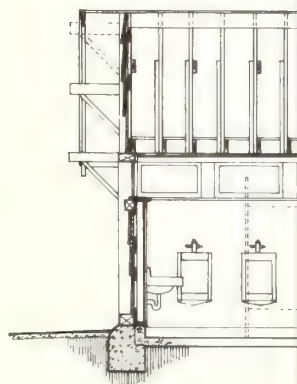


## NOTES

SOME ORIGINAL TRANSLUCENT RIPPLE GLASS REMAINS  
REPLACEMENT PANES DO NOT MATCH

EXISTING WOOD SHINGLE ROOF IS PROBABLY SECOND  
GENERATION BUT SIMILAR TO ORIGINAL GREEN  
PAINT IS MOSTLY GONE

BUILDING IS USED FOR ELECTRICAL & TELEPHONE  
SWITCHING STATION FOR OTHER STRUCTURES



SCALE  
1"=0"  
DRAWINGS

0 1 2 4 8 16 FT.

PLAN  
ELEVATION

LD

SUB SHEET NO

TITLE OF SHEET

COMFORT STATION  
PLAN, ELEVATIONS, SECTIONS

DRAWING NO

102  
25,000A

PKG NO

200P

SHEET

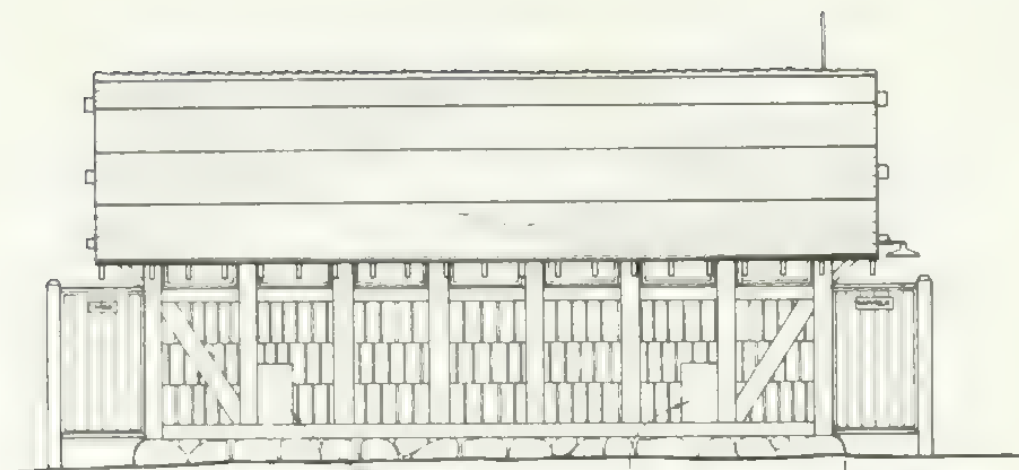
8

OF 12

SM  
ZIER  
REVIEW

DESIGNED BY MERBZ/87

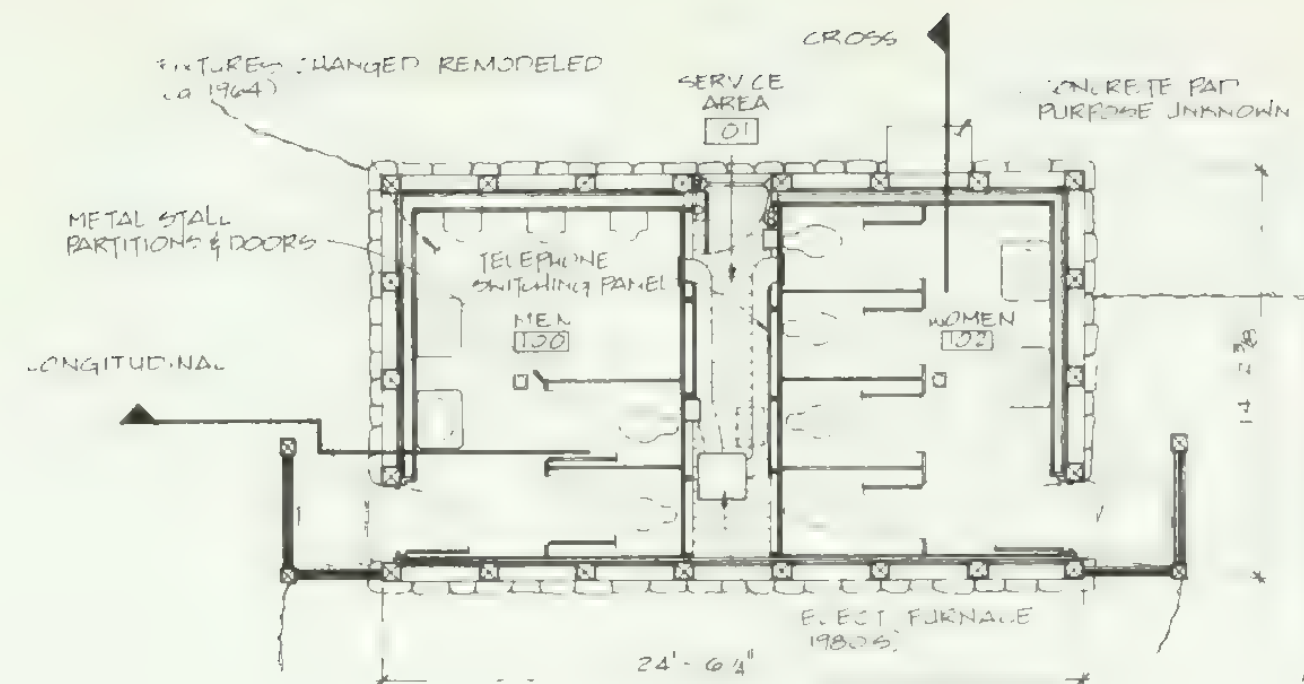




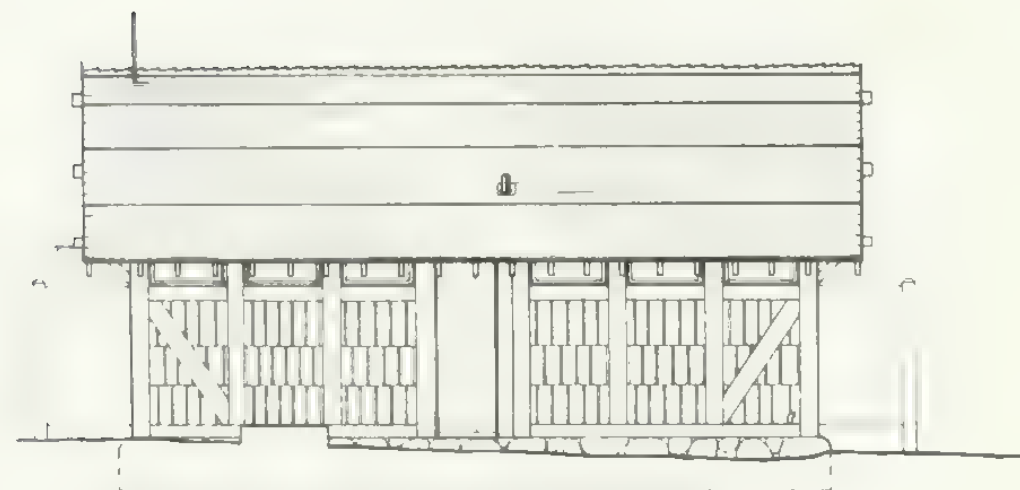
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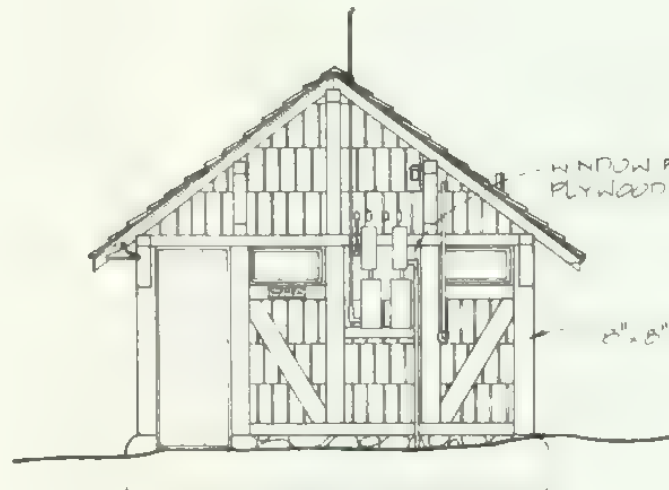
NORTH



FLOOR PLAN



EAST



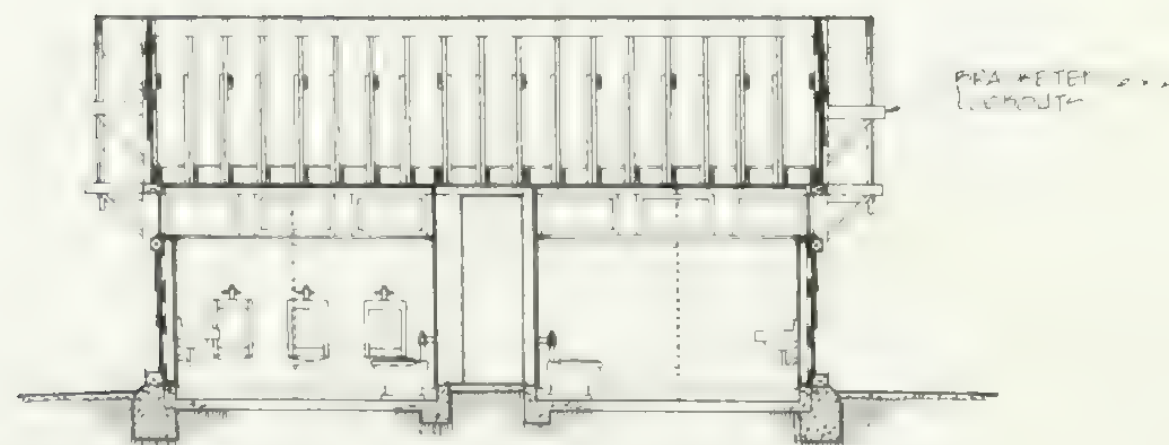
SOUTH

# NOTES

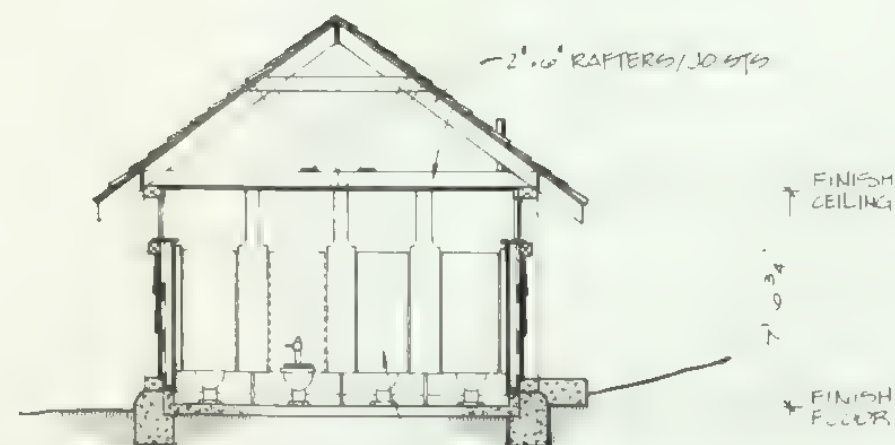
SOME ORIGINAL TRANSLUCENT RPPLE GLASS REMAINS  
REPLACEMENT PANELED DO NOT MATCH

EXISTING WEST SIDE ROOF IS PROBABLY 1960's  
GENERATION BUT SIMILAR TO ORIGINAL GREEN  
PAINT IS MOSTLY GONE

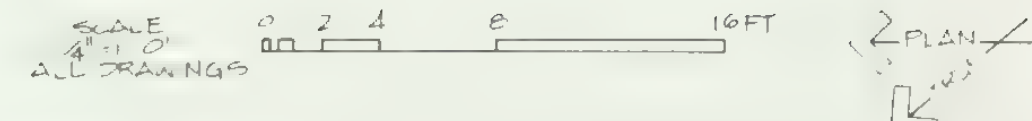
PLUMBING IS USED FOR ELECTRICAL & TELEPHONE  
WIRING STATION FOR OTHER STRUCTURES



LONGITUDINAL



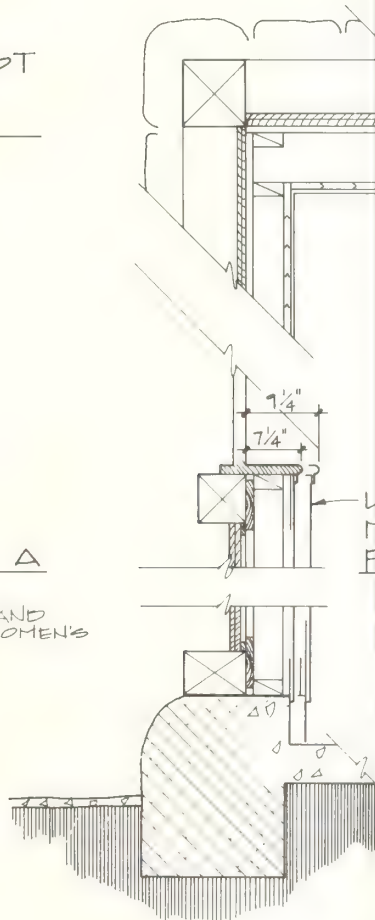
CROSS



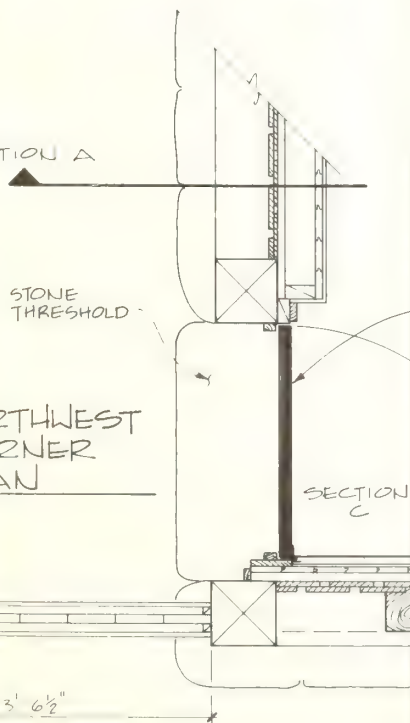
DESIGNED —	SUB SHEET NO. —	TITLE OF SHEET <b>COMFORT STATION PLAN, ELEVATIONS, SECTIONS</b>	DRAWING NO. <b>102</b>
DRAWN BY <b>FRANZ</b>			<b>25,000A</b>
TECH REVIEW —			PKG NO. <b>8</b>
DATE <b>2/01</b>			SHEET <b>8</b>
			OF 12



H WALL AND  
WALL WOMEN'S  
SAME



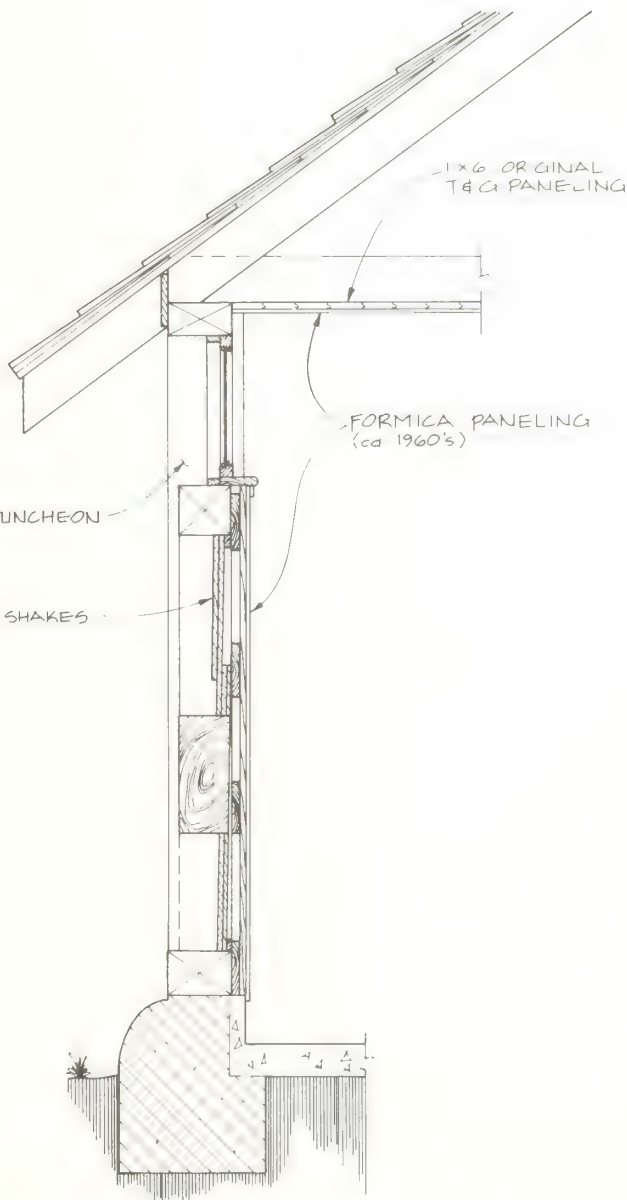
## SECTION A



NORTHWEST  
CORNER  
PLAN

SECTION

WEST WALL--SECTION C



4

8 FT.

FLAT  
TREE

SUB SHEET NO

CCF.  
BIKES  
VIEW

TITLE OF SHEET

## COMFORT STATION DETAILS

DRAWING NO  
102  
25,000A

PKG  
NO. 2000

A DIMENSIONS USED FOR DRAWING  
AND 1932 CONSTRUCTION DOCUMENTS / 87

RMG OFFICE 1985

NAME AND LOCATION OF STRUCTURE

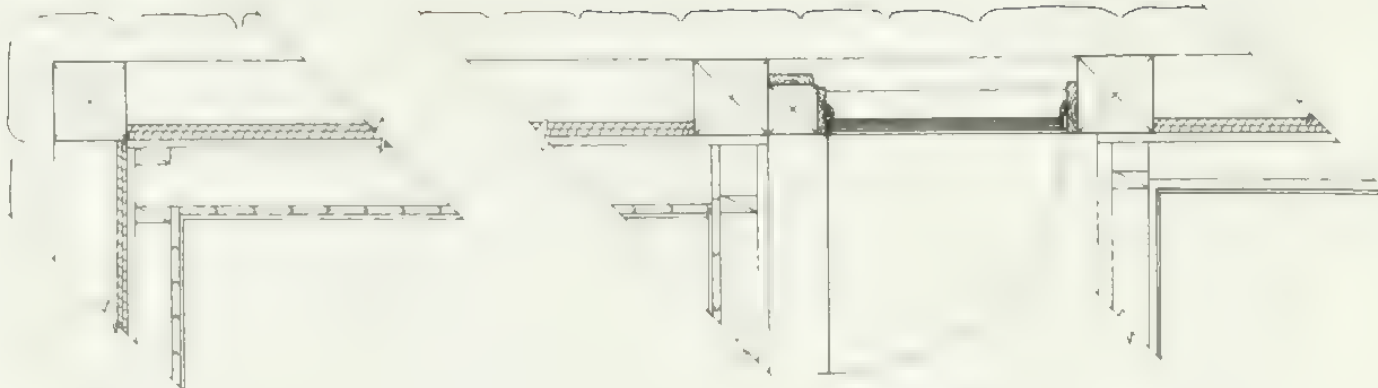
NAME AND LOCATION OF STRUCTURE
GIANT FOREST MARKET, COMFORT STATION, RANGER RESIDENCE AND GARAGE SEQUOIA NATIONAL PARK, TULARE COUNTY, CALIFORNIA

# HISTORIC AMERICAN BUILDINGS SURVEY

U.S. AIR FORCE - RA AND ENGINEERING RECORD  
U.S. AIR FORCE - PARK SERVICE  
U.S. AIR FORCE - DEPARTMENT OF THE INTERIOR



NORTHEAST  
CORNER  
PLAN



SERVICE AREA  
ENTRY PLAN

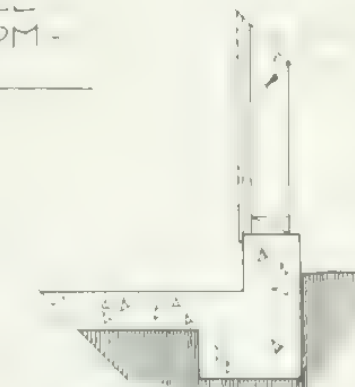
WEST  
WALL  
SECTION A



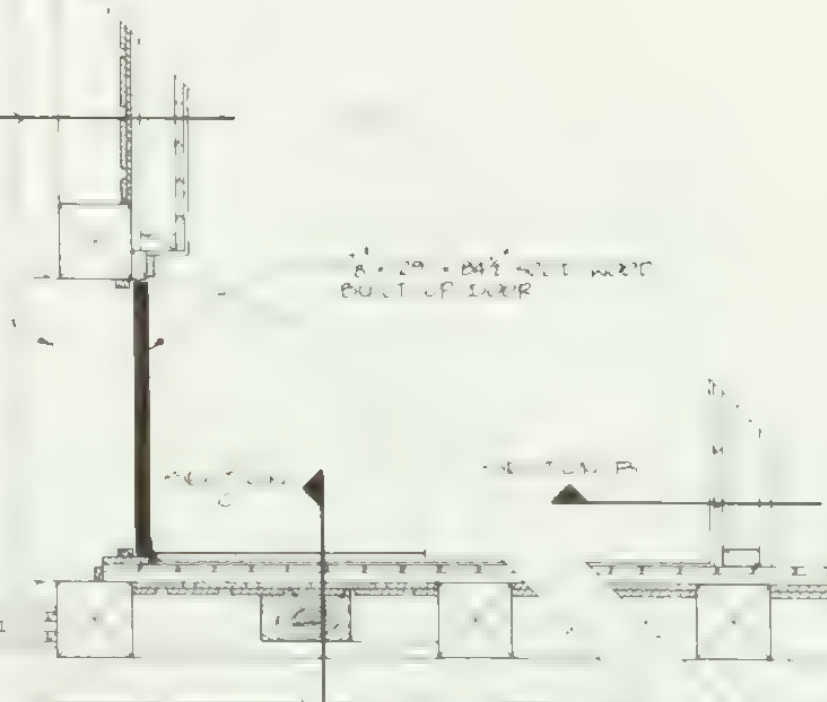
WEST WALL  
MENS ROOM -  
PROFILE

3/4" x 3/4" STUDS

PARTITION  
WALL --  
SECTION B

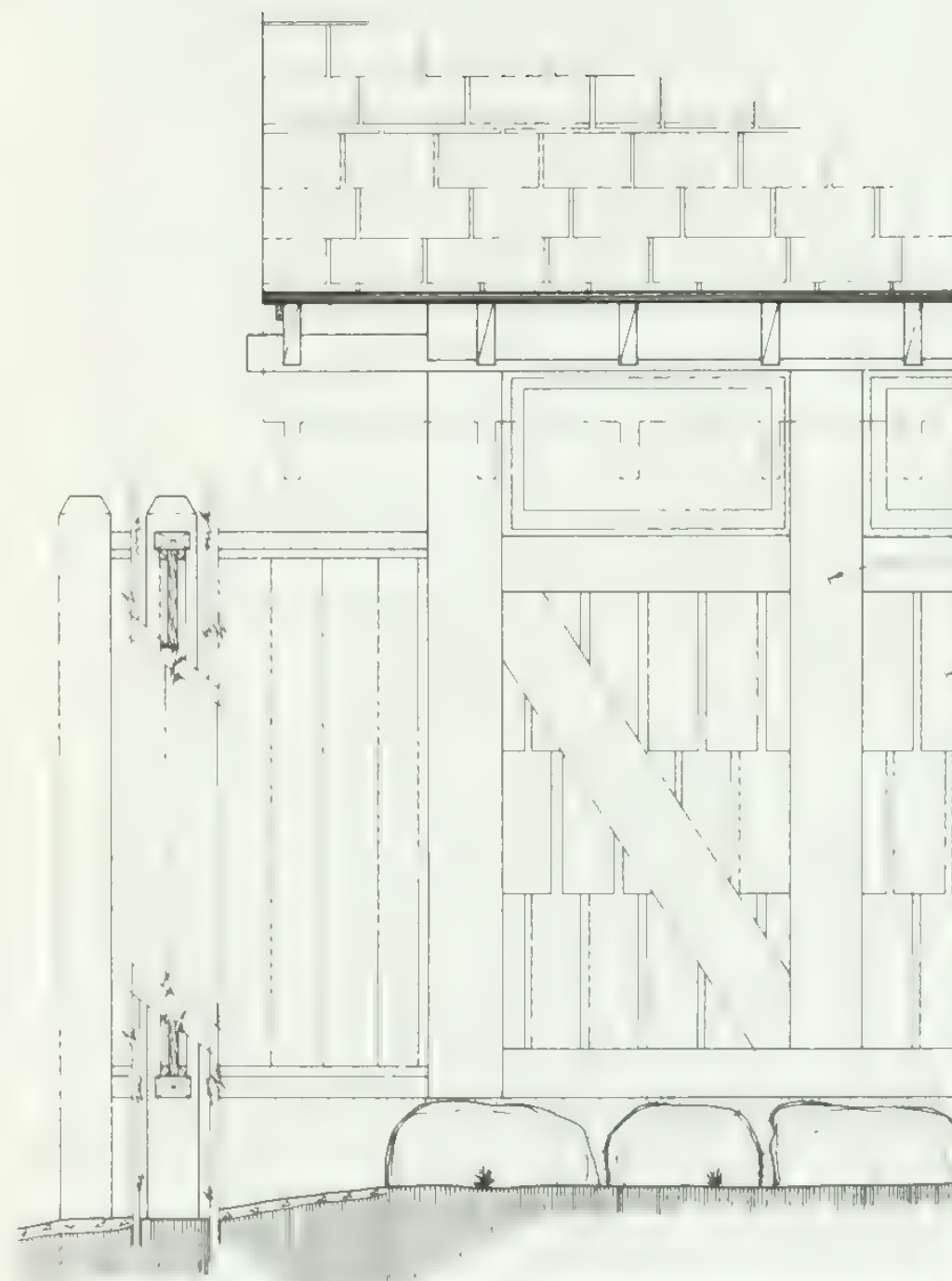


WEST  
CORNER  
PLAN

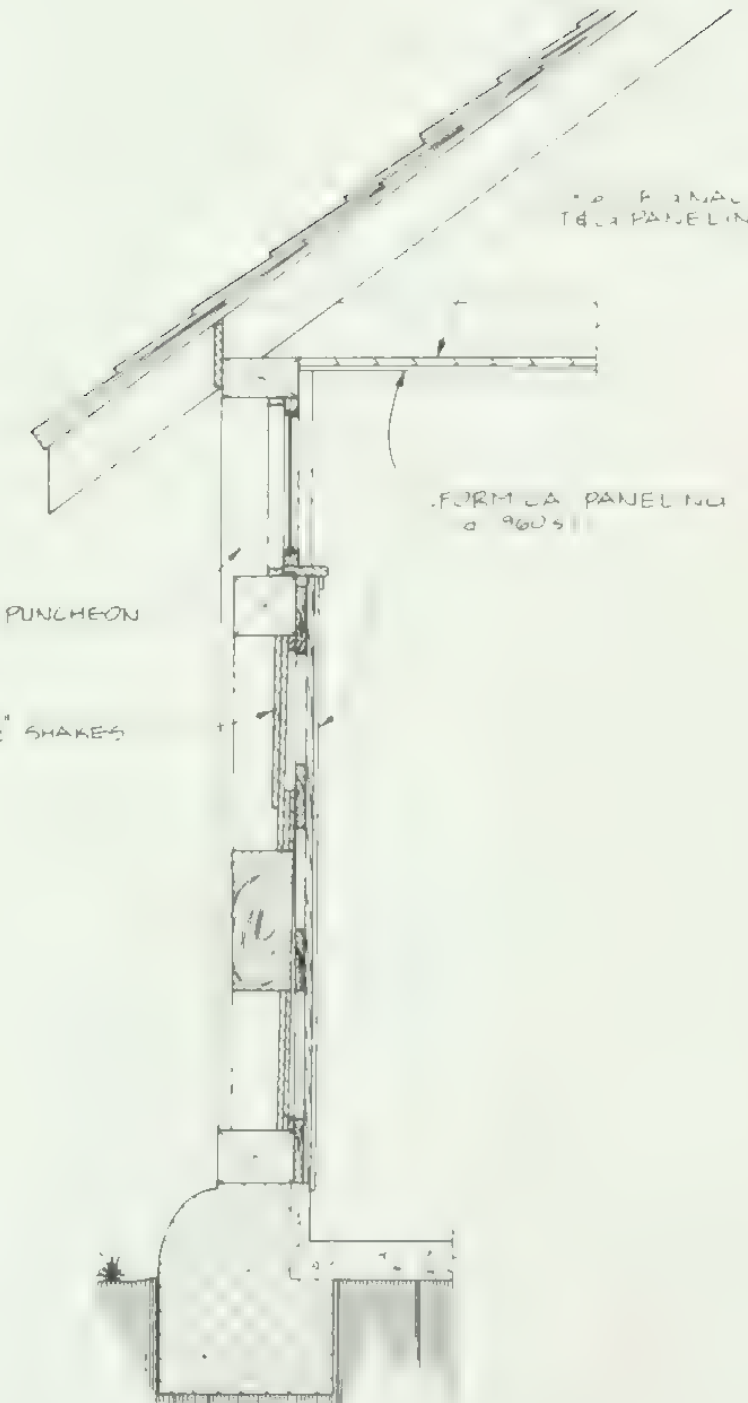


WALL DETAILS

PARTITION WALL  
AND WEST WALL  
PLAN



PARTIAL WEST ELEVATION



WEST WALL -- SECTION C

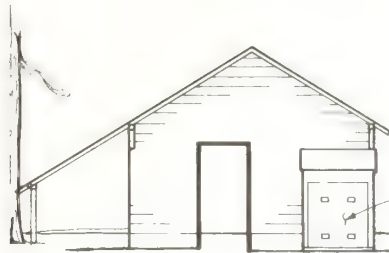
SCALE  
ALL DRAWINGS

0 2 4 8 FT

DESIGNED	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN CCF		COMFORT STATION	102
TECH REVIEW		DETAILS	25,000A
DATE 2/87			PKG NO 2207
			SHEET 9
			OF 12

NOTES: 1. DRAWINGS USED FOR DRAWINGS BASED ON MEASUREMENTS TAKEN BY FRAZER AND KENNEL 5/86 AND 10/86  
2. ALL CONSTRUCTION DOCUMENTS SOME CONJECTURE IS SHOWN AT WALL INTERIORS

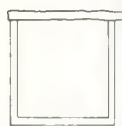




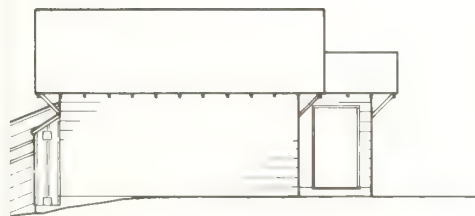
STORM SASH  
STORAGE CLOSET  
(1953 - FORMER LP  
GAS CABINET)

NORTH

STONE WALL



RESIDENCE



GARAGE

DATE: 7-1-1987  
BY: J. J. JONES

HISTORIC AMERICAN  
BUILDINGS SURVEY  
SHEET 10 OF 12 SHEETS

SURVEY NO.

NAME AND LOCATION OF STRUCTURE  
**GIANT FOREST MARKET, COMFORT STATION, RANGER RESIDENCE AND GARAGE**  
SEQUOIA NATIONAL PARK, TULARE COUNTY, CALIFORNIA

NATIONAL ARCHITECTURAL AND ENGINEERING RECORD  
NATIONAL PARK SERVICE  
NATIONAL DEPARTMENT OF THE INTERIOR

0

SUB SHEET NO.

TITLE OF SHEET

**RANGER RESIDENCE/GARAGE  
SITE PLAN, ELEVATIONS**

DRAWING NO.

**102  
25,000A**

PKG NO.

200

SHEET

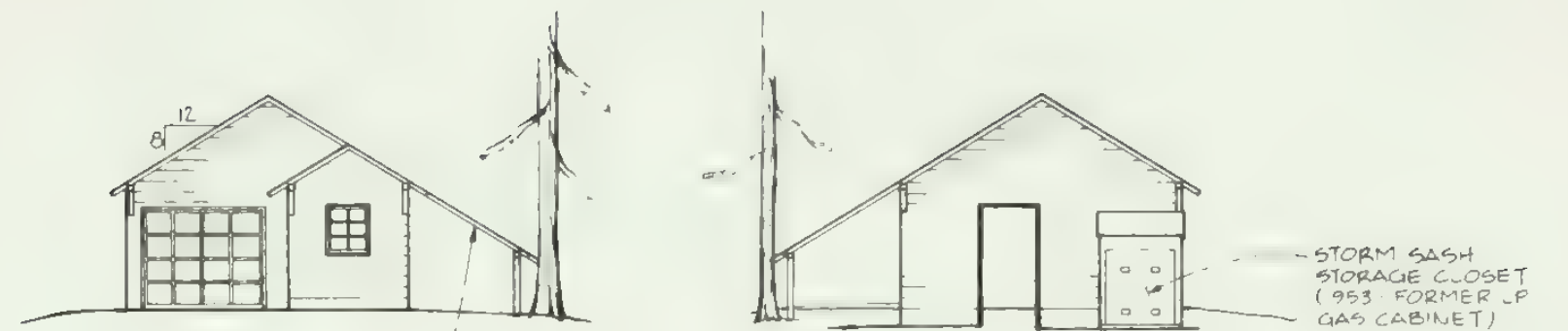
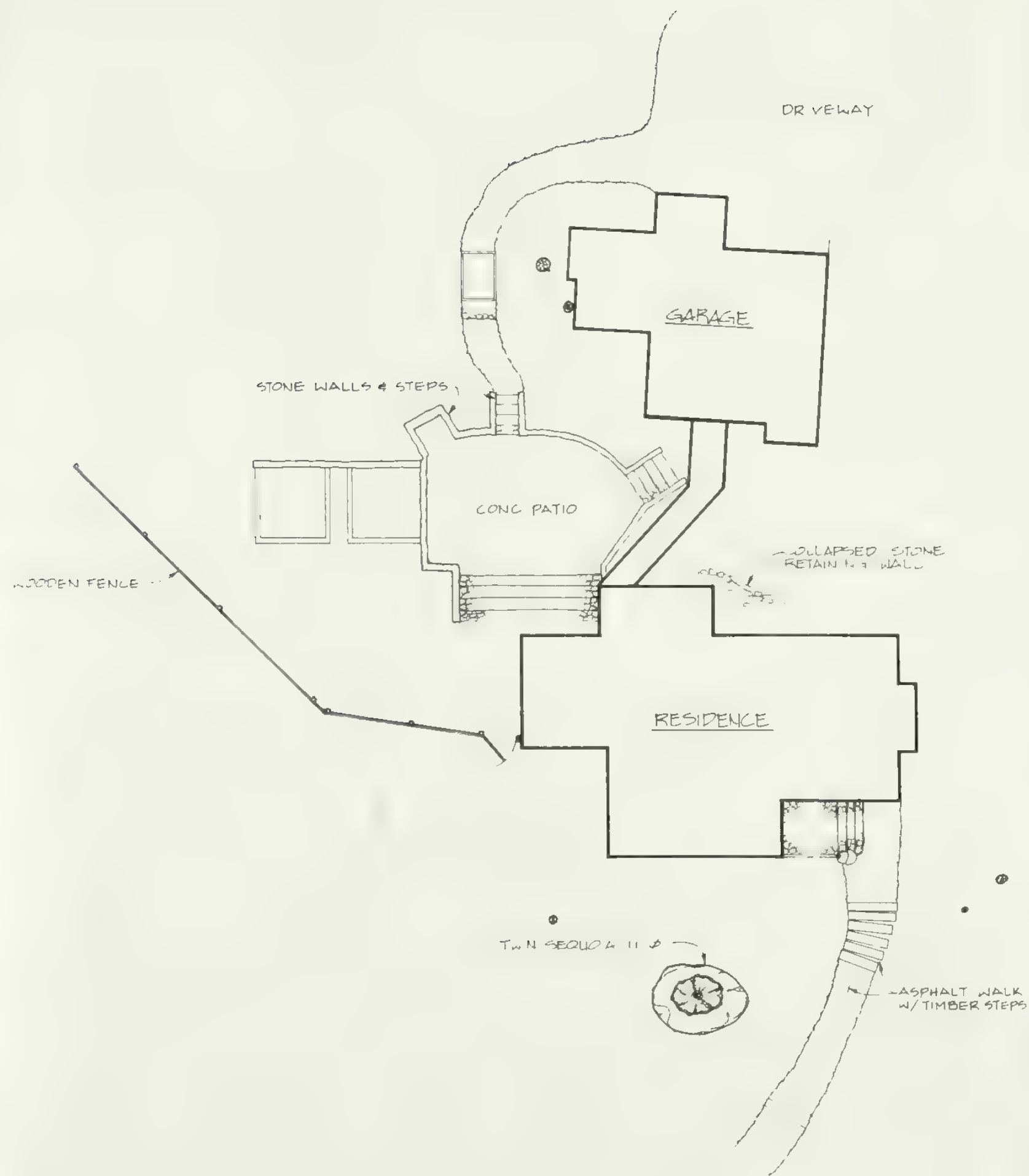
**10**

OF 12

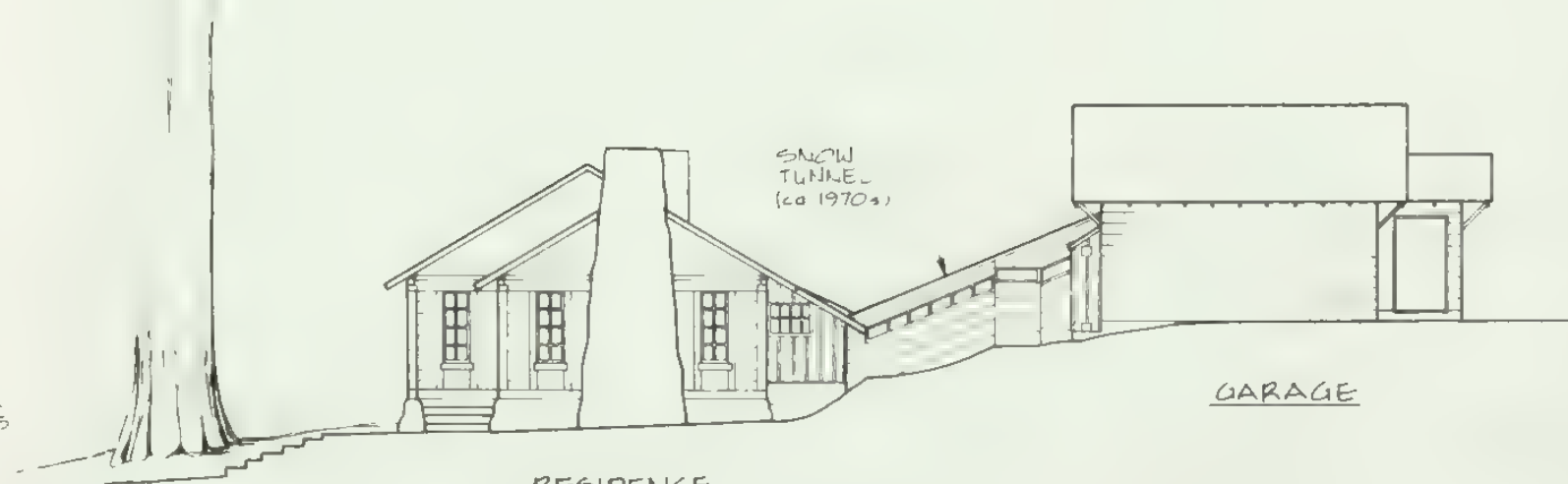
CAK  
DORE  
EVIEW

2/87





ROOF EXTENSION  
(ca 1984)



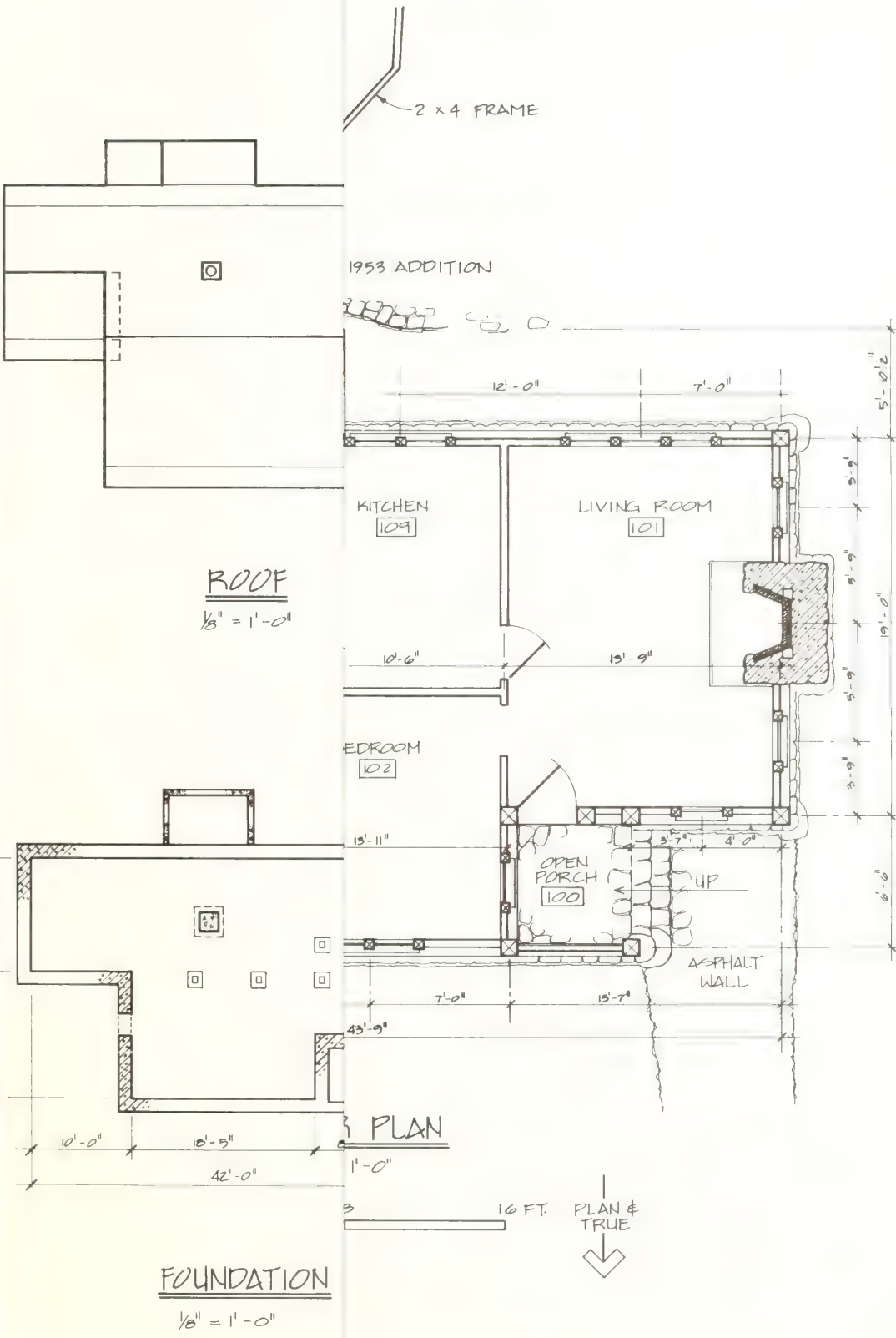
SITE

SCALE 0 2 4 8 16 32 FT  
1/8" = 1'-0"  
ALL DRAWINGS

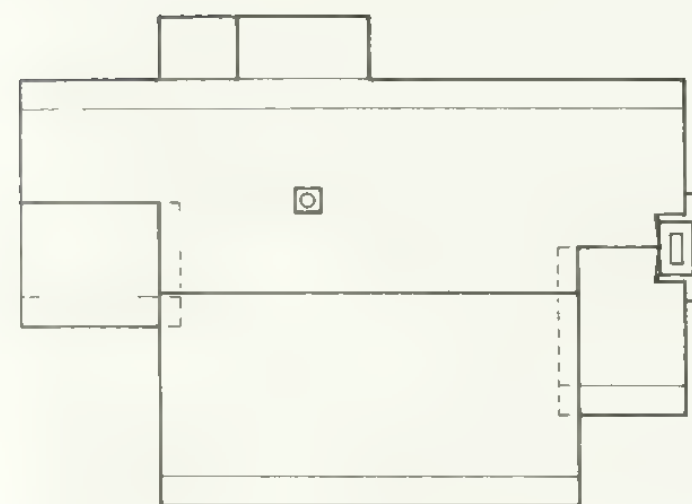
PLAN & TRUE  
↓

DESIGNED	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN C.A.K.		RANGER RESIDENCE/GARAGE	102
TECH. REVIEW S. MOORE		SITE PLAN, ELEVATIONS	25,000A
DATE 12/87			PKG NO. 10
			SHEET 10 OF 12

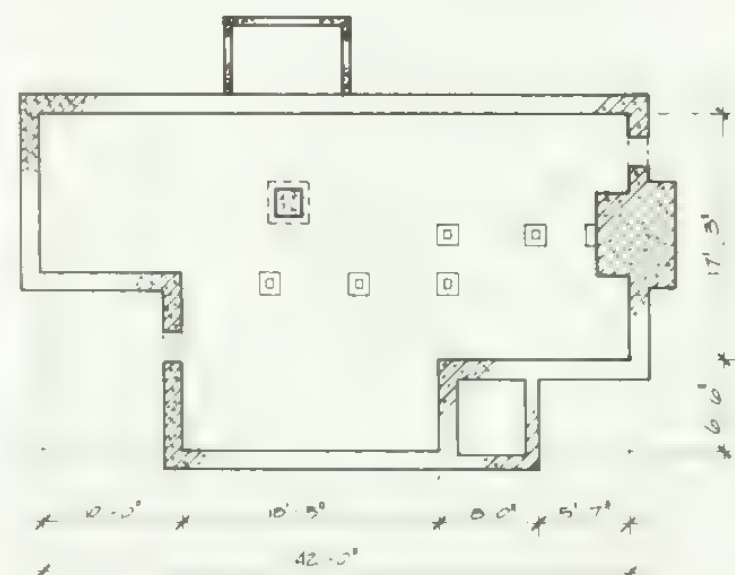




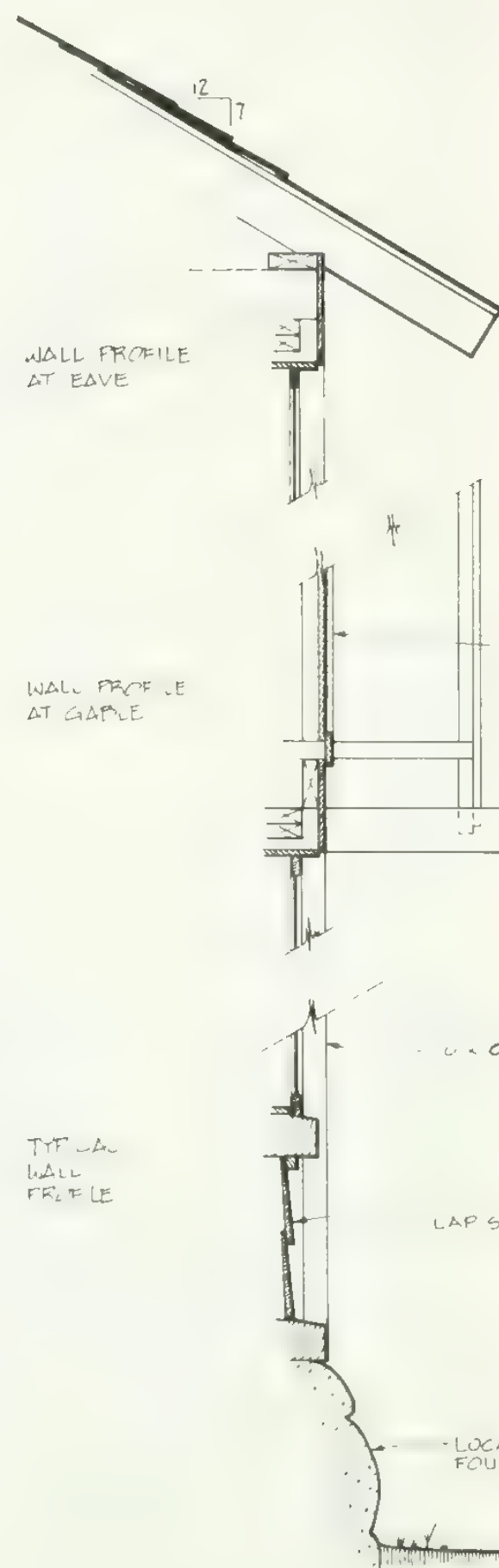




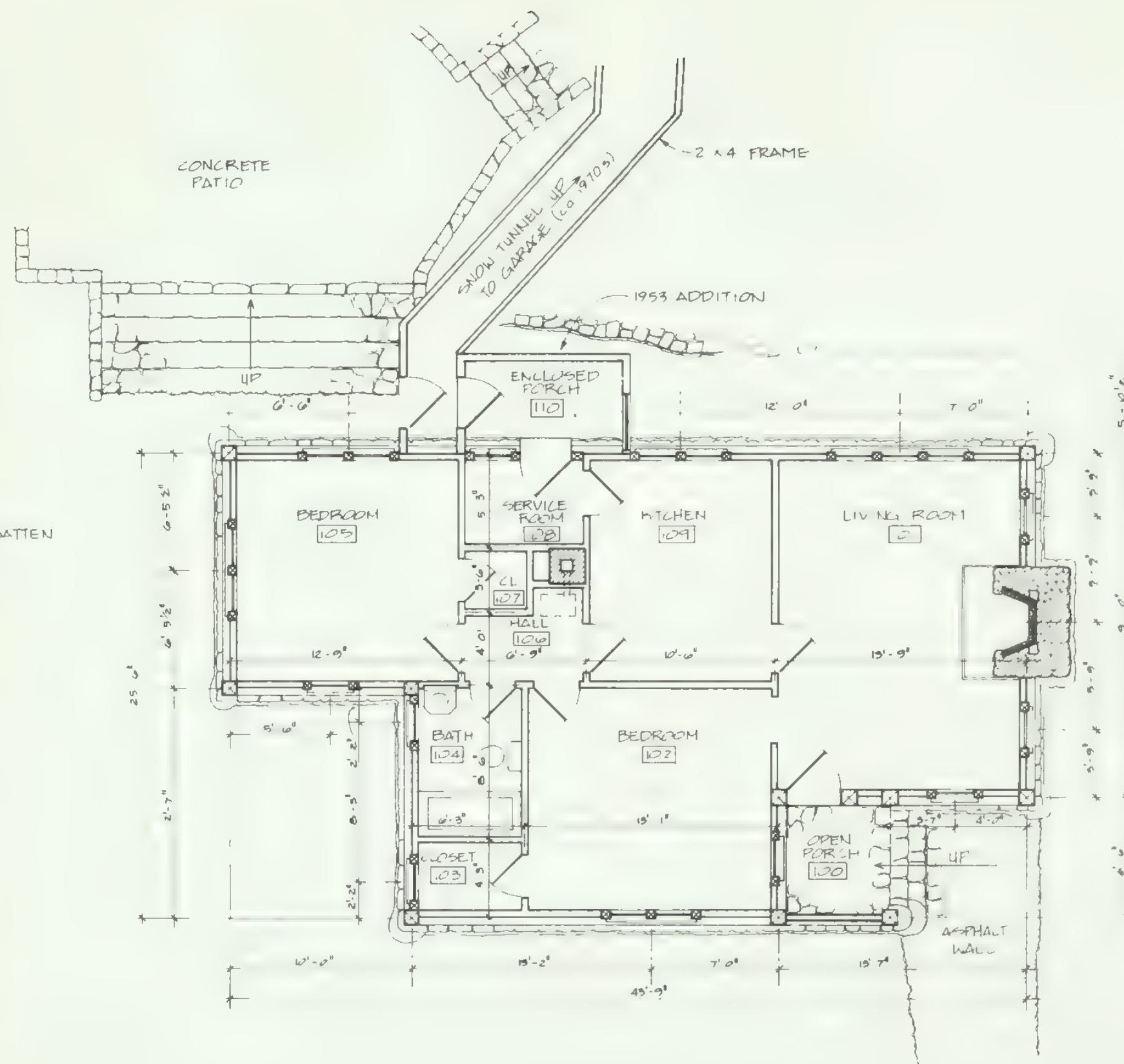
ROOF



## FOUNDATION



## WALL PROFILE

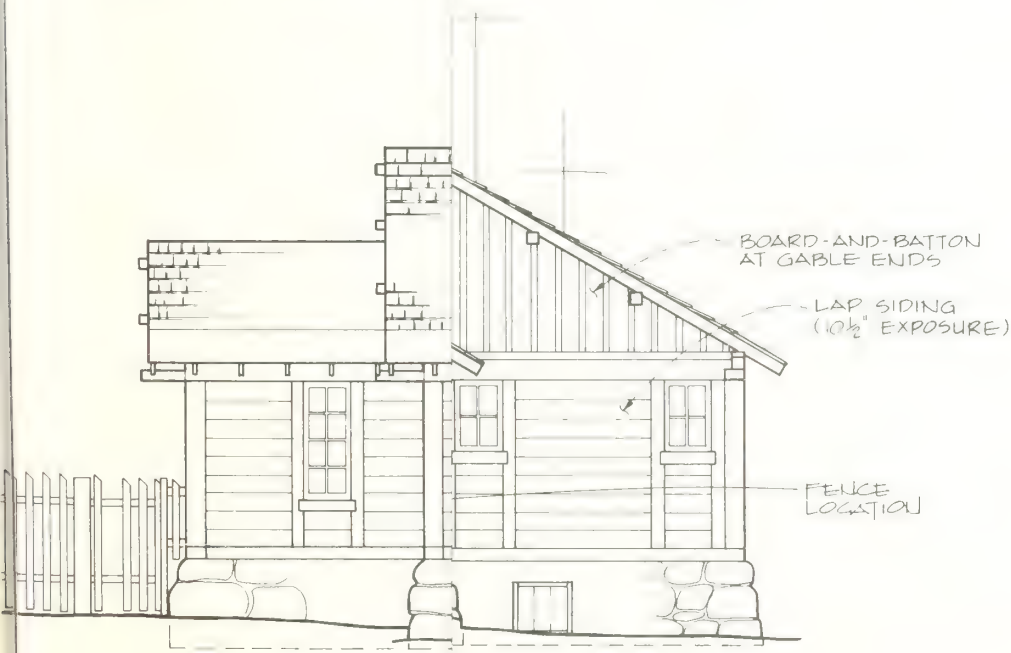
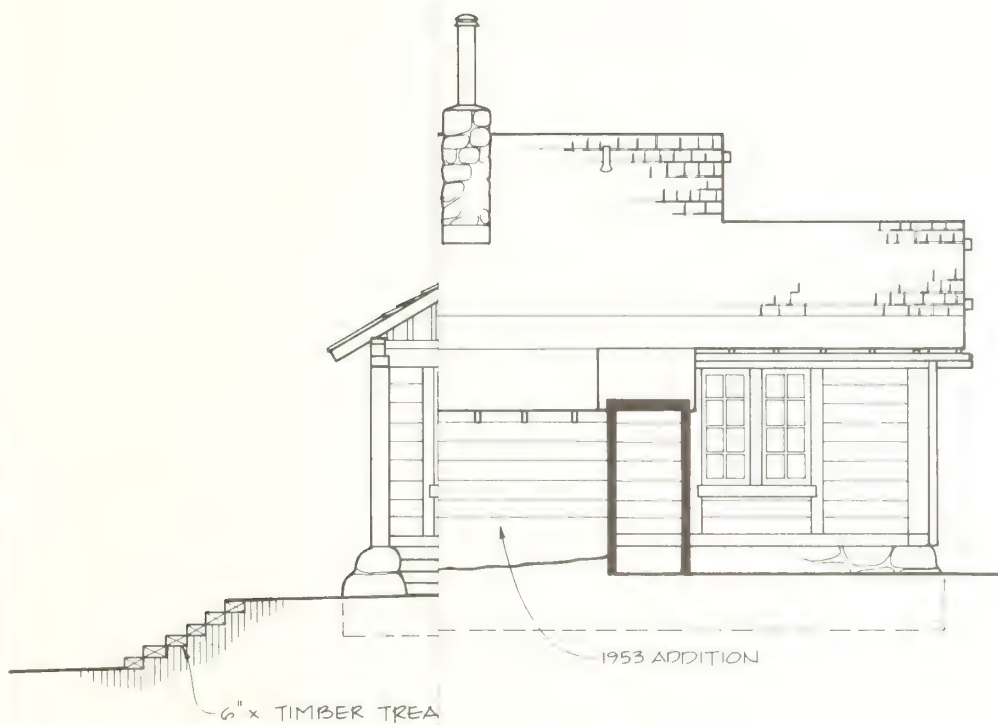


## FLOOR PLAN



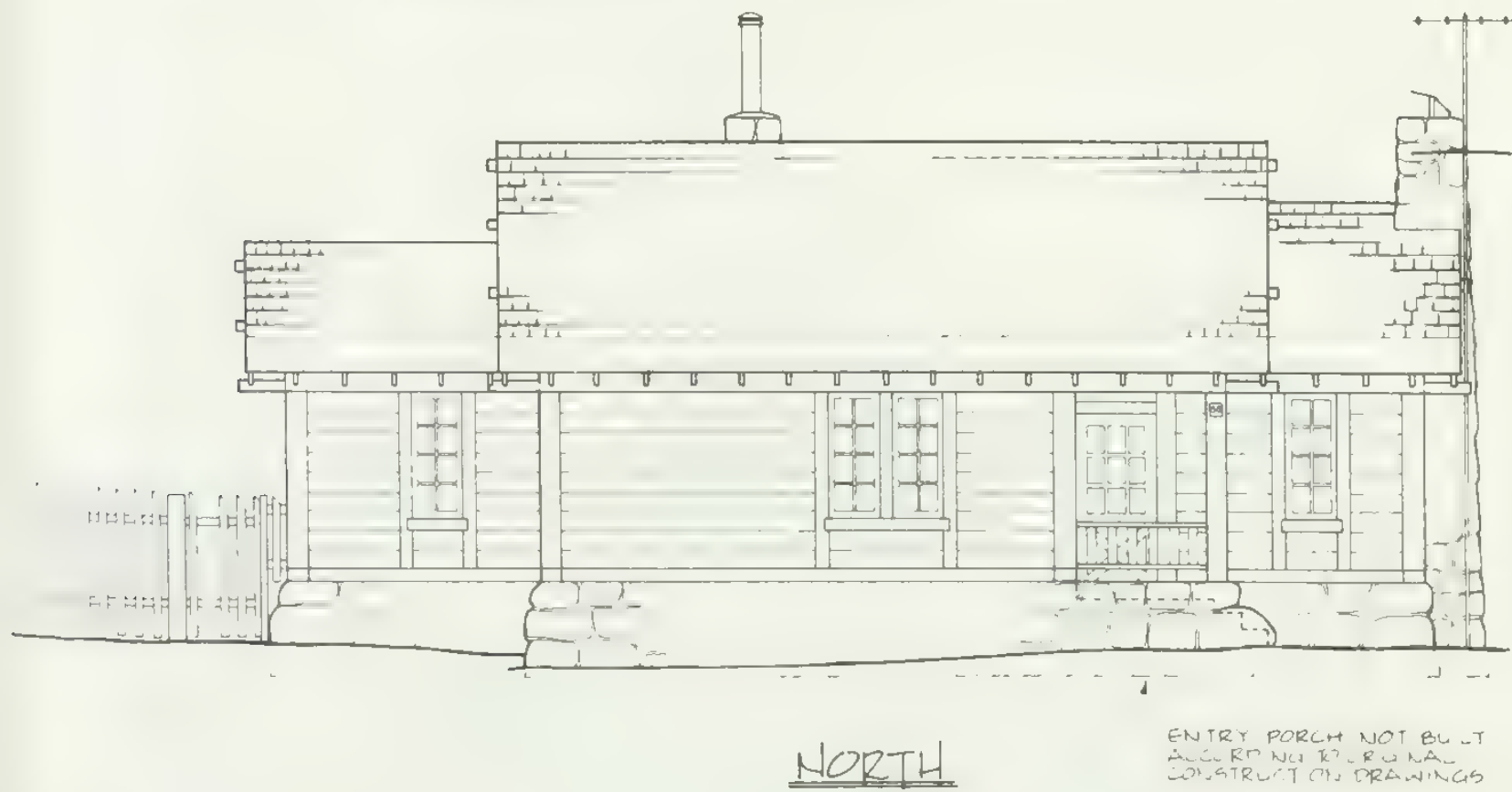
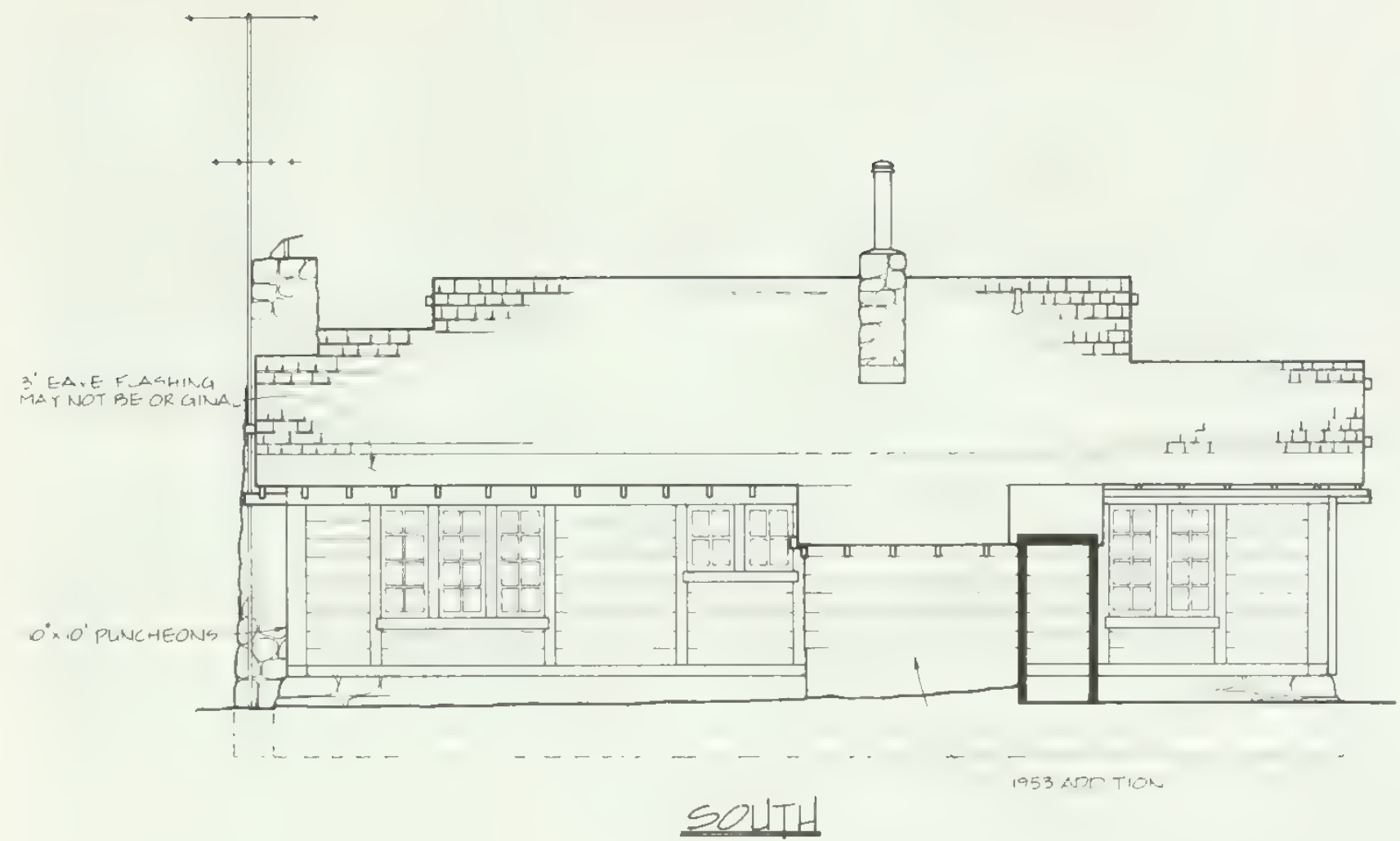
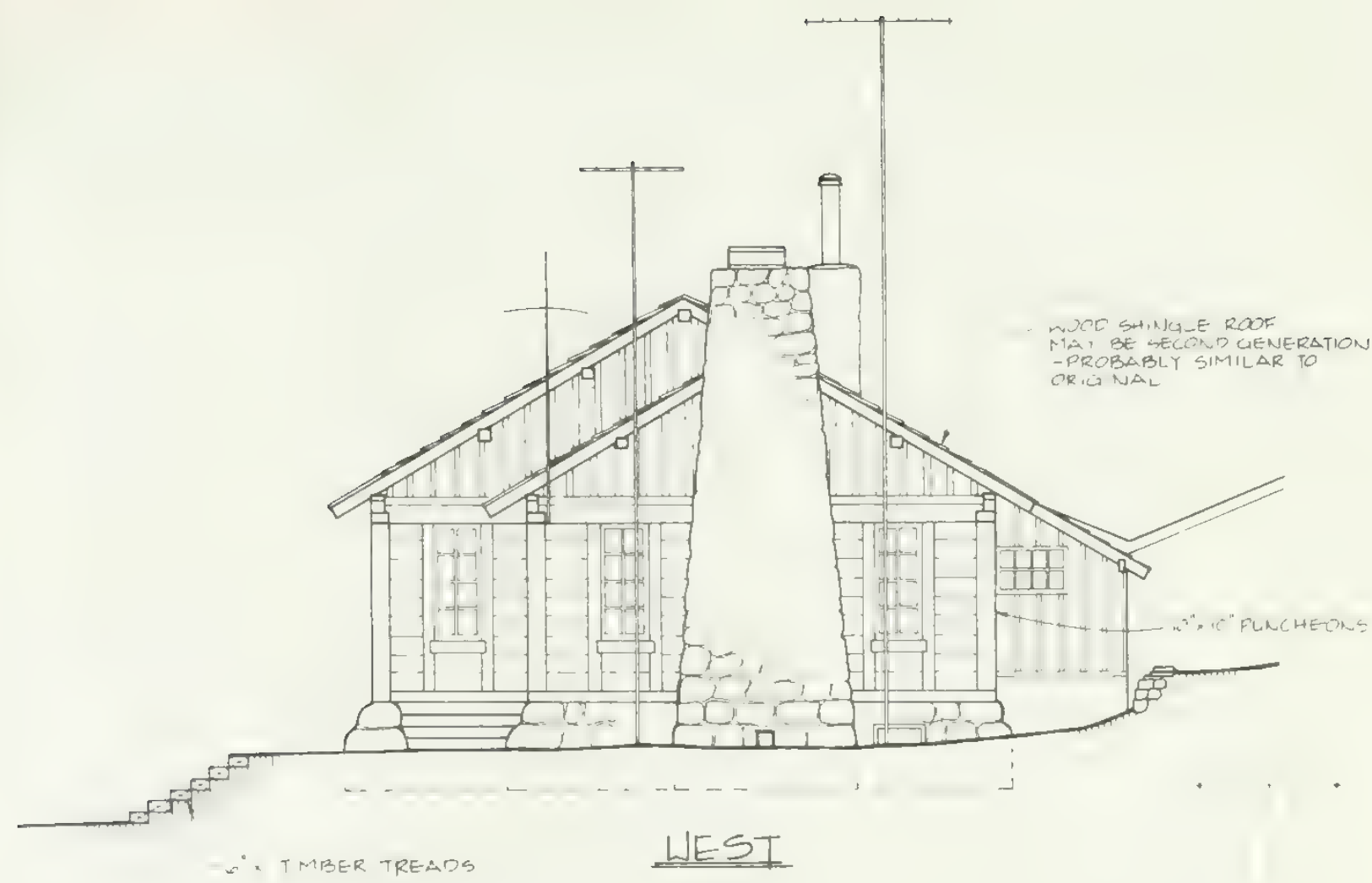
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DRAWN BY KENNEL		RANGER RESIDENCE PLANS & DETAIL	102 25,000A
TECH REVIEW			PKG NO 11 SHEET 11 OF 12
DATE 2/87			





DESIGNED DRAWN CHECKED REVIEWED DATE 12/87	SUB SHEET NO.  	TITLE OF SHEET <b>RANGER RESIDENCE ELEVATIONS</b>	DRAWING NO. 102 25,000A PKG. NO. 20000 SHEET 12 OF 12
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DESIGNED	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN		RANGER RESIDENCE ELEVATIONS	102
TECH. REVIEW			25,000A
DATE		PKG. NO.	SHEET
2/87		12	12
		OF	12



## IMPLICATIONS OF PROPOSED USE

The proposed use of the market, comfort station and ranger residence as described and amended in the Administrative Data section is drawn from the DCP (1980) and the Acting Director's letter of July 10, 1984. Additional use intentions for the market have been gathered orally from park personnel and are drawn from the Interpretive Prospectus (1986).

The proposed continued use of the comfort station and ranger residence/garage are entirely appropriate. To facilitate the same level of utility, preservation work at both buildings, some rehabilitation of deteriorated equipment and some life-safety upgrading is recommended.

The implications of the proposed adaptive use of the market are much more extensive. Besides preservation treatments, system rehabilitation and life-safety upgrading, the interior configuration of the market will have to be altered to accommodate proposed functions.

The specific architectural implications of the proposed use at each building is discussed below. By way of general summary, the implications of proposed use are not undesirable. The buildings will support functions essential to serve the day use visitor and ongoing management and protection of the park resources. The three historic buildings will stand as relics of the historic district representing tangible remains of the earliest group of permanent concessioner/NPS facilities in Giant Forest. The buildings would be interpreted through waysides or other media as examples of stylistic standards worthy of merit.

### MARKET - USE IMPLICATIONS

Rehabilitation of the market is proposed to make possible an efficient change in its utility. The reconfiguration of interior spaces to accommodate the new uses in conjunction with the correction of an



extensive array of building deficiencies (see "Analysis of Existing Conditions" subsection) would involve removal of historic fabric, however, this treatment can be accomplished without destroying the significant character and values worthy of merit. An alternative partial restoration approach, involving more intervention, is discussed in appendix H but not recommended at this time.

Currently, the market contains the functions of a general store, a lounge, merchandise storage, and operations office. The proposed use will include a gift shop, food sales area, visitor contact/interpretive display area, ranger/interpreter and operations office, as well as support storage. In addition, it is proposed to install a handicapped accessible toilet facility in the market (see entire functional program in "Recommendations" subsection). The changes to accommodate the proposed use will require a life-safety upgrade with the installation of fire-rated materials and a fire detection/warning system and a general upgrade of heating, ventilation, lighting, plumbing, and electrical services. In addition, alterations will be necessary to facilitate handicapped accessibility and the project will provide the opportunity to install energy conserving features.

With a few exceptions (see "Physical Description" section) the interior of the market contains less of its overall cultural value and little of its significant integrity, so that, although an extensive interior impact is anticipated as a result of the rehabilitation, the effect on its architectural significance will be minimal. The proposed design program has been selected to preserve the maximum extent of significant interior features and character (fireplace, pine floor and knotty pine paneling).

The exterior, too, would be impacted by the proposed use change at the market. Besides the stabilization, repairs, reroofing, and preservation treatments proposed--which would have no adverse effect on exterior cultural values--two actions would impact the building exterior as a result of the alterations necessary for the new use: a new door must be installed and landscape changes must be made.



The new door would be cut through a wall of the 1938 addition to access the proposed unisex handicapped toilet facilities. This door would occur at one of the least significant elevations and can be accomplished in a design style compatible with the building character. This impact will be less severe, in terms of facade intervention, than would be necessary in a handicapped accessible modification of the comfort station (see drawing sheets 2 and 3 "Condition Assessment - Deficiencies"). Another alternative--the construction of a separate handicapped accessible toilet facility in the vicinity of existing buildings (not illustrated)--would be a more severe impact on the historic scene than the cutting of a new door in the market. In the final analysis, the new door approach is judged to have the least adverse impact and least cost of the alternatives and would not be an adverse impact on the primary facades that possess the most architectural significance.

The landscape modification proposed would be a combination of the need to reduce adverse site conditions for preservation reasons and the need to facilitate handicapped accessibility into the market. Negative surface water drainage, excessive lateral loads imposed by soil build-up and blockage of crawl space vents by site elevation build-up over the years are the three adverse landscape conditions that need to be corrected independent of market use. The treatments recommended to reduce these deficiencies include lowering grades, installing new drainage slopes and installing a retaining wall along the back side (east) of the market. The proposed use of the market will require wheelchair access through several front (west) elevation doors as well as the new unisex toilet door at the south end of the 1938 shed roofed addition. This use change will entail site changes to walkways to facilitate wheelchairs. It is proposed to accomplish the site modifications in a coordinated manner that reduces the adverse impacts while facilitating handicapped access. There will be a visual change but no adverse physical alteration of architectural/landscape architectural values because these no longer exist (see "Physical Description" subsection, above).



### Location of Functions in Market

The market is to be divided equally between concessioner use and NPS use (director's memo 7/10/84). The Interpretive Prospectus (1986) designates NPS use at the south half of the building (see figure 12). The reason for this particular location is not implicit but implied. It is proposed, in particular, to utilize the fireplace at the south end ". . . often, so it must remain unobstructed, allowing visitors to gather around and warm themselves" (IP, p. 14). The present concessioner (GSI) has expressed agreement with this particular north-south division (Fall 1987).

A physical division between the two primary functions should be adequate to ensure operational security, provide a fire barrier and to discourage food consumption in the interpretive display areas. On the other hand, visitor communication between the two functional areas could be encouraged to avoid the inconvenience of entering and exiting the building at one end and reentering and exiting at the other. Perhaps more importantly an interconnection of functions could portray the interdependence and cooperative role of NPS and concession functions in service to park visitors.

The treatment proposal would create the opportunity for either a functional isolation or intercommunication. This would be achieved by installing a new fire-rated partition, dividing the market in half, with a fire-rated doorway including automatic closing equipment so it could be left open during operating hours but would close in the event of fire. The door would be fitted with a two-way lock.

Other functional program design considerations are listed in the "Recommendations" subsection which also provides design guidelines.



## COMFORT STATION - USE IMPLICATIONS

Continuing the historic use of the comfort station is certainly the most appropriate use of the building but would involve the impact of interior rehabilitation to upgrade its architectural/engineering systems for ongoing serviceability. The minimal rehabilitation--and some exterior preservation--recommended in this HSR would involve a physical intervention and impact on the building (see "Assessment of Effect" subsection below).

The rehabilitation necessary to facilitate the same level of use would include upgrading life-safety features by installing fire code wall materials and fire detection/warning devices, would improve sanitary conditions by providing cleanable interior surfaces and an adequate supply of fresh air, would reduce heating costs by installing insulation, repairing duct work, etc., and would assure another 30 years of mechanical utility by replacing plumbing and electrical systems. It should be restated that the current interior of the comfort station is the product of at least one previous remodeling effort and that none of the exposed interior surfaces or features, except the concrete floor, which would remain undisturbed, are original. Additional measures to reduce preservation deficiencies such as reroofing, site work, etc., are discussed in the "Analysis of Existing Conditions" subsection.

In the judgment of the project team, the physical impact and historic architectural facade modifications necessary to make the comfort station handicapped accessible would be undesirably extensive; the entry doorways would have to be enlarged, which would require structural modification of the exposed squared timber frame, loss of a window at each end, and would require increasing the size of the exterior privacy screens. In addition, a handicapped-accessible comfort station would require a completely new walkway and ramping system from the parking area to the building that would significantly change the landscape in front of the building. (See "Accessibility--Alternative #2" sheet 3 of Condition Assessment--Deficiencies drawings.) To avoid these impacts, a second



approach with a lesser impact would locate an alternative handicapped-accessible toilet in the market and has been recommended (identified as "Accessibility - Alternative #1" sheet 2).

#### RANGER RESIDENCE/GARAGE - USE IMPLICATIONS

The decision has been made to keep the ranger residence/garage and continue its use as quarters for an area ranger. This is the most appropriate use for the historic building and because rehabilitation for this continued use was largely conducted in 1983, the impact of the recommended scope of work presented here would have little effect.

Minor interior work is anticipated and would include installation of a fire detection/warning system through the attic and GFCIs at kitchen and bathroom A/C outlets. All exterior treatments are of a preservation nature (reroofing, repointing, repainting, rebuilding a site retaining wall, and various minor repairs). The result of the work and impact on the building would leave it unimpaired. Its preservation and continued occupation is the best possible impact.

The snow tunnel connecting the residence to the garage would continue in service under the proposed use. It appears to function adequately. If its replacement is deemed necessary at some future date, the design compatibility guidelines provided in the "Recommendations" subsection should be followed.



## ANALYSIS OF EXISTING CONDITIONS

### DEFICIENCIES

The comfort station and ranger residence have been routinely maintained by the National Park Service and currently are in generally good condition. Both buildings have undergone rehabilitation work, which has resulted in the general preservation of the exteriors and also preservation of the interior of the ranger residence. The existing interior operational condition of the comfort station is the product of work from the early or mid-1960s, and the condition is fair to unsatisfactory. Rehabilitation work at the ranger residence has included interior upgrades such as replastering walls and installing new electrical and heating systems (most recently in 1983) leaving its operation condition at a satisfactory level.

The market is concessioner maintained and its condition is fair to poor because of several serious preservation problems. The building has undergone numerous remodelings, the first beginning in 1930 soon after construction. Interior spaces have been remodeled whenever concessioner needs changed, the most recent examples being the 1975 roofing effort and 1983 remodeling of the bar and lounge area (see "History Data" section). Each of these changes occurred in response to a specific need and limited work scope without thought for overall and future effects on historic integrity.

Inspections of the buildings in 1986 revealed both preservation deficiencies and a need for treatments to meet use intentions. Site grade, surface water drainage and moisture are problems at each building as is the need to renew paints, replace roofs, perform various carpentry repairs and install thermal and moisture protection. All three buildings should be connected to a central fire detection/warning system; no means of fire detection/warning exist in the market or comfort station. Also, mechanical equipment is unsatisfactory to some degree at each building. Some rehabilitation of mechanical equipment (crawl space piping) is needed



at the ranger residence while all plumbing, heating and ventilation systems are deficient at the market and comfort station, especially in terms of intended use.

A number of problems are common to the market and comfort station and both will require significant rehabilitation in terms of intended use. These common shortcomings include: materials which fall short of fire resistive code requirements; lack of energy conserving insulation systems; inoperable and damaged windows; inadequate ventilation; lack of storm sash or double glazing; electrical wiring and fixtures inappropriate for proposed use; and exterior accretions which clutter significant facades.

Stone masonry at the market and ranger residence is deficient. Mortar is deteriorated and some voids are present in foundation walls at the ranger residence and in chimneys at both buildings.

The market has extensive preservation problems and will require the most extensive array of rehabilitation treatments to facilitate its change in use. Some of the deficiencies of the market include: areas of rotted wall frame and sill beam timbers; decayed floor joists and beams; wood boring insect damaged members; inoperative crawl space ventilation (excessive moisture); inadequately reinforced roof structure; deteriorated concrete floor in 1938 additions; inadequate means of egress and handicapped accessibility; and the general need to remove/rearrange interior wall partitions to facilitate new functions.

The following photographs and tables identify specific deficiencies, their causes, and treatment possibilities for each building in terms of current conditions and proposed use. Additional discussions of some deficiencies follow the tables and are cited by note number under the 'deficiency' column on the table.



PHOTOGRAPHS--DEFICIENCIES



Figure 73 (left). Market - Addition Retaining Wall Structural Failure (5/86). This view shows the concrete fractures at the sill of the 1938 north wing addition loading doors. To the excessive dead load of earth overburden taxing the entire retaining wall, at this location, severe stress is introduced by the additional 'live' load resulting from delivery trucks. The earth should be removed in front of this wall and loading dock redesigned or eliminated. Photograph is taken from room 106 looking east.

Figure 74 (right). Market - Room 112 Deficiencies (5/86). Looking towards the southeast corner, this view includes windows and ceiling covered with plywood. The paint deterioration on the concrete retaining (foundation) wall is the result of excessive moisture in the wall. The damp-proof coating on the outer side of this wall is no longer serviceable. The earth should be removed in front of this wall and new damp proof coating applied.







Figure 75 (left). Market - Rot at Southeast Corner (5/86). The site grade at this location produces negative drainage (run-off flows towards the wooden sill of the building). The result is near total loss of the 8x8 sill plate due to resulting rot, partial loss of the corner puncheon, and loss of shiplap siding (replaced with the plywood patch). These materials should be replaced and grading performed to facilitate positive drainage.

Figure 76 (right). Market - Additions' Concrete Floor (5/86). This is a typical area of cracked and patched concrete flooring. This deterioration is the product of lateral loads from the adjacent hillside, plus moisture damage and the result of ground uplift due to excessive moisture. The floor should be thoroughly cleaned and a new thin-coat surface installed throughout. Excessive moisture could be reduced by improving site drainage.







Figure 77 (left). Market - Shed Addition Roof (5/86). Uplifting of the aluminum panel roofing (1975) is indicative of its loosening and deterioration. Note also, some damaged and deteriorated rafter tails. The metal roof should be removed and roll roofing replaced. Rot should be cut out of rafter tails and voids filled with dutchmen patches, carpenters wood filler and/or epoxy.

Figure 78 (right). Market Roof and Chimney (5/86). The chimney counter-flashing probably dates to 1930 and needs replacing. The fireplace chimney utilizes a heavy-gauge screen as a spark arrestor. There is no rain guard. The chimney should be cleaned out, a metal flue lining installed, flashing replaced as part of a comprehensive reroofing, and a compatibly designed spark arrestor/rain guard installed.







Figure 79 (left). Market Fixed Sash (5/86). A large percentage of the market's facades is single pane glazed. This is a major source of heat loss. Installing an additional and similar multi-paned 'storm' sash on the interior side of these windows would have little visual impact from the exterior and would be cost effective, over time, in terms of energy conservation.

Figure 80 (right). Market Broken Window (10/86). This is the easternmost window of the north facade (part of the 1938 addition). This photograph was taken after the plywood covering was removed to enable examination. Note broken sash and glazing which should be repaired.







Figure 81 (left). Market Door (10/86). Most of the market doors were bi-fold, center hinged. This door--to room 100--is the only unmodified bi-fold door remaining. It is inoperative because asphalt has been placed at its sill to control water run-off. The negative effect of the asphalt is that it traps moisture against the door causing it to rot. This asphalt walk also buries a crawl space vent window to the left of the door (not visible). The asphalt should be removed and the site grade lowered. Door repairs may involve replacement of excessively rotted members, filling holes and refinishing. Door hardware should be cleaned, repaired, duplicate replacement parts installed and historically finished.

Figure 82 (right). Market Door Jamb (10/86). This detail of an exterior door jamb to room 102 show the history of doorway modifications common to the market: door swings have been reversed and locking and latching systems have been changed. This detail shows that doors are fitted directly to the timber framing--a separate casing is not employed. Notice that the 3/8" x 11-3/4" vertical interior paneling is placed directly over the horizontal shiplap exterior skin of the building. There is a need for insulation and vapor barrier between and for a fire-resistive upgrade of the wall.







Figure 83 (left). Market Dormer Windows (10/86). The dormer windows are used for both attic and general building ventilation. The heavy 'bird'-screen wire fabric used here is probably a response to snow loads. Notice damaged rafter tails and uplifting aluminum roofing. Dormer windows should continue to operate as part of the ventilation strategy.

Figure 84 (right). Market Addition Window (5/86). Most of the additions' windows are 'permanently' covered with plywood and boards. This seems to be a defense against vandals and snow/moisture damage. This practice may be trapping moisture and accelerating damage. Many windows have missing or broken hardware. This window is weatherstripped tight and nailed shut and covered with plywood on the exterior. Window repairs should include refinishing sashes, reglazing where necessary and renewal of hardware including adequate security locks.







Figure 85 (left). Market Accessibility (10/86). The door sill here is about 18 inches above the walkway. This door would permit entry to room 101, but is not in use. A sizable ramping network would be necessary to make all market doors wheelchair accessible. Notice, too, mismatched door hardware.

Figure 86 (right). Market Accessibility (10/86). These steps and door stoop were installed about 1984 at the front of the north wing. They provide access to room 102 doors. Stairs such as these for visitor use would require hand railings and guard railings on the stoop. Accessibility to the south end of the building could be most easily achieved because door sills are closer to walk grade. Ramps will be necessary here.



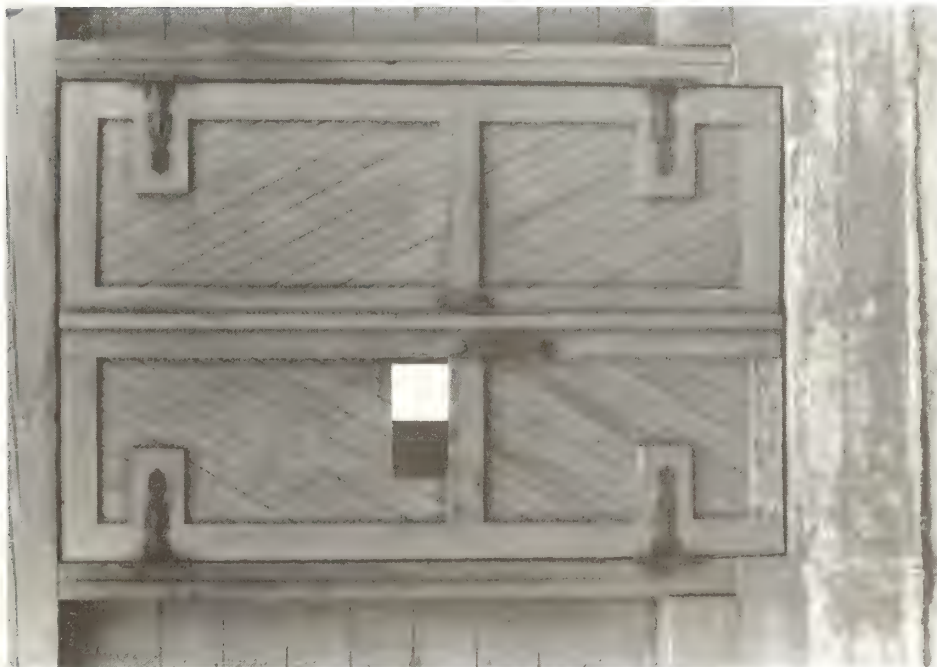




Figure 87 (left). Market Accretions (5/86). This photograph was taken at the junction of the 1938 north wing addition foundation wall (at left) and the original north wing wall (at right). Water piping is indiscreetly attached to exterior walls. The wooden box in the foreground (right) contains a water valve. Utility rehabilitation will permit elimination of these facade accretions.

Figure 88 (right). Market Accretions (5/86). This cabinet is mounted on the front of the market, it contains the main propane manifold with breakout lines to the 3 unit heaters and one hot water heater of the market and passing through the market attic and out the north side through a second valve cabinet (see figure 58) to two other buildings. When the propane system is rehabilitated, this accretion can be removed.







Figure 89 (left). Market Electrified Gas Lamp (5/86). A detail of one converted gas lamp in room 100. Local belief has it that (a) the market had gas lighting originally and (b) these electrified gas fixtures are some of those original to the building. Evidence has arisen to both confirm and refute this. Evidence to the contrary is suggested in figure 62. However, these fixtures are not of an inappropriate character and could be used in the proposed rehabilitation.

Figure 90 (right). Market Bar Area (10/86). The built-in architectural equipment shown here in room 100 would, of course, have to be removed to make way for the proposed visitor contact functions. However, it is suggested to salvage and reuse the sequoia wood bar top as the future information counter. The hand carved wooden sign shown here is one of several suggested for acquisition and reuse in the proposed interpretive area.







Figure 91. Comfort Station, View from Southeast (ca. 1983). The south facade is cluttered with electrical wiring and equipment which covers up one window. These accretions should be removed as part of the utility rehabilitation and distribution lines should be placed underground. The smooth asphalt walkway becomes slippery under these weather conditions. The walk could be made smaller, a new textured surface installed and additional handrailing considered. Note site grade in contact with wooden sill at this corner. Earth removal and installation of a more functional drainage swale is recommended. (HABS #CA 2148 C-3)







Figure 92. Comfort Station Accessibility (10/86). The asphalt walks in Giant Forest Village are gently sloped. At this location, however, the overall rise from parking level to comfort station floor level is more than 10 feet over a distance of less than 80 feet (to the men's side). To achieve handicapped accessibility standards, nearly twice this length would be required--a switchback ramping system would be necessary. The handrail visible here is bent, intrusive and marginally effective for this 10-foot wide walk. The water fountain seen in the left photograph should probably stay here although the Area Study should confirm such decisions.







Figure 93. Comfort Station, Men's Room (5/86). These views show the interior character as a result of the 1964 rehabilitation. Notice only cold water is provided at the lavatory, the steel toilet stall partition is intrusive, and window glazing is mis-matching. Not visible is paint buildup on formica wall paneling which is no longer easily cleaned. Also notice A/C outlet which is not fitted with a GFCI. These deficiencies should be corrected as part of a comprehensive and historically sensitive rehabilitation design.







Figure 94. Comfort Station, Women's Room (5/86). These views include wooden toilet stalls which 'fit' the character somewhat better than those in the men's room. Notice fluorescent ceiling fixture, non-matching lavatory taps, non-matching glazing and A/C outlet without GFCI. The walls, ceiling, windows and doors are below standards of energy conservation. Materials do not meet fire resistive standards. Rehabilitation should correct these deficiencies.







Figure 95. Comfort Station, Room 101 (5/86). These views are taken from the east side of the comfort station through the door into the utility chase which separates the men's and women's rooms. The electric furnace is fairly new (ca. 1983) and adequate but its flexible ducting is damaged. This should be resecured or replaced with more durable material. The entire left hand wall is cluttered with telephone switching equipment and panel board. These should be eliminated when the service needs are removed when Giant Forest development is moved elsewhere. The makeshift floor is unsatisfactory and should be stabilized. Barely visible in the view at left is the T&G ceiling paneling which probably exists under the formica finish in both restrooms. Some T&G should be saved and reused in the rehabilitation in all comfort station rooms on the ceiling for example.







Figure 96 (left). Ranger Residence, View from West (5/86). Spot repointing of the stone chimney and foundation are recommended. The stone retaining wall at right is partially collapsed allowing negative site drainage patterns. The wall should be rebuilt. The crawl space vent window is partially buried by earth buildup. Several areas of site grading are suggested. Notice intrusive communication antennae blocking windows.

Figure 97 (right). Ranger Residence, View from East (10/86). Some repairs are recommended to stabilize the fence and gate. The crawl space access door is broken and should be repaired. The building needs repainting and reroofing.







Figure 98. Ranger Residence Garage (5/86 and 10/86). At left, view from west; at right view of entry from south. Repainting, reroofing and installation of GFCI's are recommended at the garage.







Figure 99. Ranger Residence/Garage, View from East (10/86). The date of the stone and concrete patio development is not known but it is of compatible material. The site drainage, however, is deficient as a result of both water from the patio and the gutter/downspout being concentrated at the southeast corner of the residence at right. This should be corrected. It's interesting and out of character that the siding and windows of the snow tunnel follow the slope of the land rather than being placed horizontally as is the siding of both the residence and garage.







Figure 100 (left). Ranger Residence, View from East (10/86). The roof of the residence may require replacement prior to FY 94. The flue on the small chimney replaced a larger but more compatible flue in about 1984. The large chimney needs a spark arrestor/rain guard of more compatible design.

Figure 101. Snow Tunnel Interior (5/86). The present structure appears to serve its purpose well. Compatibility guidelines are provided in the "Recommendations" subsection for a replacement structure, when that becomes necessary.







Table 1. Condition Analysis--Market

Deficiency	Cause/Notes	Treatment
Crawl Space and Foundation		
1) poor ventilation of crawl space <sup>1</sup>	1) most vents (8 of 15) are fully are partially blocked by the asphalt walk, by soil and debris or by the porch	Regrade immediate site to achieve positive surface water drainage, lower grade to 6" (minimum) below bottom of wall sill beam; lower grade at foundation of south and west elevations to expose crawl space vents and install vent wells as necessary to prevent drainage into and blockage of vents; re-move porch; lower crawl space grade as required by code or install exhaust fan and install vapor barrier.
2) excessive moisture in crawl space <sup>1</sup>	2) some vents allow surface water drainage into crawl space; poor ventilation gives rise to excessive moisture	
3) 1938 additions' concrete retaining wall is over <sup>2</sup> stressed and spalling (see figure 73)	3) excessive moisture and lateral force of hillside at wall and mechanical load at loading dock	
		Build retaining wall with drainage system along entire rear of building to remove lateral stress from the 1938 additions concrete retaining wall; repair surface of concrete wall and install damp-proof coating.



Table 1 (continued)

Deficiency	Cause/Notes	Treatment
Floors and Walls		
4) rotted and deteriorated floor joists, and beams in south wing	4) see #1 and #2; crawl space grade is 12" or less , not 18" minimum below the lowest wood member as required by code	Perform site work and crawl space improvements as above; develop and implement IPMP; rehabilitate and stabilize walls and floor by replacing rotted, deteriorated and damaged members; use pressure treated material when not exposed to view.
5) rotted and damaged wall sill beam at southeast corner of building 1 (see figure 75)	5) negative surface water drainage and natural build-up of grade next to building	
6) deteriorated and damaged materials in structural wall of west (front) elevation of south wing 1 & 6	6) active wood-boring insect infestation and excessive moisture	see above
7) existing exterior paint finish showing evidence of deterioration, inconsistent color appearance	7) exposure to elements; paint is not thoroughly and uniformly applied; e.g. to undersides of punchcons	Repaint building using historic color scheme of brown with green window trim, achieving a uniform coverage and consistent appearance



Table 1 (continued)

Deficiency	Cause/Notes	Treatment
Roof and Chimney		
8) existing metal roof is failing and is an intrusion on historic appearance (see figure 77)	8) existing 1975 metal roof was temporary and has reached end of life expectancy	Remove metal roof and replace painted wood shake roof beneath, duplicating its historic appearance; install new felt roofing on 1938 shed addition and dormer; refinish hips, valleys and chimneys; repair or replace deteriorated and damaged rafter tails; close holes at soffitt
9) some rafter tails deteriorated and damaged <sup>4</sup> (see figure 77)	9) exposure to elements	
11) bats and other pests have access to attic	11) holes at soffitt	
12) absence of seismic reinforcing where roof structural system joins wall structural system	12) state of California and UBC require building to meet seismic codes when rehabilitated, if change of use or change of occupancy	Install reinforcing clips at structural connection of roof and wall for seismic resistance. Reinforce roof structure by decreasing rafter span with new support beam, and install additional rafters and bracing (trussing).
13) roof is understructured <sup>5</sup>	13) rafter spans and on center spacing is not adequately sized for loads; deflection under snow loading is unacceptable; only part of the main building rafters are braced	



Deficiency	Cause/Notes	Treatment
Floors, Walls, and Ceilings		
14) 1938 additions' concrete floor is cracked and deteriorated <sup>2</sup> (see figure 76)	14) lateral force of hillside on 1938 additions concrete retaining wall and groundwater uplift buckled floor	Install new floor surface over the 1938 additions concrete floor and, at least, partial carpet in visitor contact circulation area. Rehabilitation for use would involve re-moving and salvaging interior finish materials from walls and ceilings and removing partition walls not compatible with proposed uses; furring out exterior walls as required for insulation, wiring and plumbing.
15) potential for excessive wear of wood floor in proposed visitor contact area	15) visitor contact area expected to be a high foot traffic area; also, the floor repair (see #4) will result in partial floor replacement	
16) exterior walls and ceilings do not meet fire codes <sup>6</sup>	16) no fire-resistive materials used in original construction, walls are less than 1-hour rated	Insulate attic and walls if possible
17) exterior walls and attic are sources of heat loss (uninsulated) <sup>6</sup>	17) NPS policy supports energy conservation measures--none are extant	
18) certain partition walls not compatible with proposed use <sup>7</sup>	18) change of use and circulation patterns	Construct new partition walls using salvaged or new compatible finish materials. Install the required fire-rated gypsum board layer on all walls and ceilings.
19) inadequate arrangement of partition walls for proposed use <sup>7</sup>	19) change of use and need to separate functional areas will require additional partitions	



Table 1 (continued)

Deficiency	Cause/Notes	Treatment
Doors, Windows, Fixtures, Equipment, Furnishings		
20) doors and windows <sup>8</sup> source of heat loss (see figure 79)	20) poor fit, damage, no dual glazing, no storm sash, no weatherstripping	Rehabilitate all doors and windows necessary for use and include caulk, weatherstrip, new storm sash and security/exit hardware.
21) doors and windows worn and damaged, certain doors and windows inoperative (see figures 80, 81 and 82)	21) doors and windows are affected by age and use, some are plywood covered or are secured in the closed position for security reasons	
22) certain fixtures, equipment and use furnishings not compatible with proposed uses	22) change of use	As part of use rehabilitation, remove dysfunctional fixtures, equipment (ice makers, coolers, etc.) and use furnishings. Install new furnishings (countertops, exhibits, etc.) appropriate for proposed visitor contact use and install fixtures, equipment and furnishings provided by the concessioner
23) only two doors are handicapped accessible <sup>9</sup>	23) current walk is built-up over previous surfaces but located below most door thresholds; steps are provided at two entries	Remove existing walk and install new walk sloped to allow easy accessibility to all necessary doors of west elevation. Design to be compatible and should not negate function of crawl space vents (see #1 & #2).



Table 1 (continued)

Deficiency	Cause/Notes	Treatment
<u>Electrical and Mechanical</u>		
24) existing plumbing and related fixtures are old, systems are intrusive, and incompatible with proposed use	24) system approaching end of its life cycle and is makeshift; change of use	Install new plumbing and appropriate fixtures for proposed uses.
25) no handicapped accessible toilet facilities <sup>9</sup> that meet NPS policy	25) rehabilitation of comfort station would result in major site intervention (for ramps) and destructive modification of facades and entries; no alternative toilets will exist when development moves from Giant Forest	Install alternate handicapped toilet in market, suggest unisex type
26) existing electrical wiring system is visually intrusive and incompatible with proposed use	26) change of use and needs; existing locations unsatisfactory	Install new electrical and lighting systems appropriate for proposed uses and historically compatible.
27) existing lighting is intrusive and incompatible with proposed use <sup>10</sup> (see figure 60)	27) location of systems is unsatisfactory and fluorescent lights are inappropriate for this historic structure	



Table 1 (continued)

Deficiency	Cause/Notes	Treatment
28) absence of fire detection/alarm devices	28) NPS policy requires fire warning devices in historic buildings as used here--none are extant	Install a fire detection/alarm system for all three bugs which has notification capability at ranger residence and/or park headquarters; temporary measures are appropriate prior to FY 94
29) modern gas heating system is a visual intrusion, provides only local area heating (figures 61 and 62)	29) three propane unit heaters suspended from ceiling	Install new central heating system and mechanical ventilation system in attic; both systems to be functionally and aesthetically compatible with proposed uses and appearances
30) ventilation is inadequate	30) natural ventilation is limited because most windows are permanently closed for security purposes	



## Table 1 Notes:

1. Moisture, rot and insects: The south end of the market (room 100) and crawl space below exhibit the most severe areas of preservation concern. Appendix A discusses and documents the results of fabric investigations here.

2. 1938 Additions: The two additions made to the market in 1938 have become important to the building. Removal of the additions would require the reconstruction of the original market rear wall, a design task requiring excessive conjecture. The additions enclose 361 square feet under the gable portion of the north wing, and 900 square feet under the shed roofed portion and make up about one-third of the floor space of the building. It is felt that the correction of the deficiencies identified, rather than their removal, is justified for these reasons. See structural observation in Appendix B.

3. Paint: Paint materials and colors are presented in Appendix G.

4. Roof: The original roof was designed to slightly nose overtop of rafter tails. In some areas this overhang is inadequate to prevent water spilling onto the rafter tail and wicking upward between roof sheathing and rafter tail crowns. The final design details for the proposed reroofing should consider a slight extension of the sheathing nosing, or the cutting of a drip line in the sheathing edge or some other unobtrusive construction detail to improve moisture control and prevent recurrence of rafter tail deterioration. Fabric information regarding the roofs and their historic color is contained in Appendix G.

Other design (replacement) concerns include snow, ice and rain water management characteristics of the market roof. The existing roof structure is inadequate to support potential snow loads. Reinforcement is recommended (see Appendix B) to avoid the need for snow removal. The maintenance of gutters, although non-historic, and an adequate drainage system is also essential as is the need to avoid ice build-up on walkways.

5. Shed Roof: Structural engineering calculations are based on existing loading capacities of members (see Appendix B). The rehabilitation proposal (see Recommendation subsection) would include installation of insulation, vapor barrier and a sheetrock ceiling which would require a reduction of rafter deflection.

6. Exterior walls: The combination of exterior wall problems--excessive moisture infiltration, insect infestation, rot and deterioration, absence of insulation, no longer effective vapor barrier, and inadequate fire code rating--combine to justify the dismantling and reconstruction of the interior layers of the exterior wall system. This wall rehabilitation treatment would involve the salvage and reuse of knotty pine paneling and would, in addition, facilitate electrical (and where necessary, plumbing) system replacement.



7. Interior partition walls: Information concerning the historic floor plans in the market has not been found. Based on fabric study, some walls are believed to be older than others. It is understood that plan layout changed several times as functions and needs changed during the life of the market. It is assumed, for the purposes of this project, that very little architectural significance or integrity is associated with the plan layout while some value has been assigned to the knotty pine paneling and the importance of load bearing walls is recognized (see Compatibility Guidelines in Recommendations subsection).

8. Windows: An unusually large percent of the market facades is fenestration (windows and doors). Because of the construction approach employed, thermal performance is very poor and made much worse because of the large areas of single pane glass and poorly sealed windows and doors. It is appropriate as part of the rehabilitation project to upgrade and install energy conserving measures. Fixed windows could be fitted with a permanent and reversible second layer of glazing. This could be mounted on the interior. Operable windows and transoms could be fitted with removable storm sash which would be put up during winter (heating) months.

These should be wooden framed, detailed for compatibility with existing windows and could be designed for either interior or exterior placement. It is conceivable that some windows could be rebuilt to incorporate a thermal or double glazed pane. The translucent windows of the comfort station are possible candidates for this approach. Such an approach is not ruled out if the net visual effect of the double glazing can be achieved with imperceivable results. Mock-up trial units should be built prior to final design decisions.

9. Accessibility: Issues concerning handicapped accessibility are discussed under the "Compliance with Regulations" subsection below and under the "Implications for Use" subsection above.

10. Lighting: The value of the electrified gas lamps in room 100 has been discussed (see figures 89 and 90), however, evidence to date is uncertain to confirm the historical connection of these lamps with the market. It is possible that they may be imported from elsewhere. However, they are in-character, their escutcheons fit existing ghosts, and their reuse in the final rehabilitation design is encouraged.

11. Fire detection/warning systems: Life-safety issues, including requirements for fire detection and warning devices are discussed under the "Compliance with Regulations" subsection.



Table 2. Condition Analysis--Comfort Station

Deficiency	Cause/Notes	Treatment
Building Preservation		
1) wood shingle roof (patched in about 1983) is aged and expected to fail by 1995 <sup>1</sup>	1) normal exposure to elements	As part of building preservation maintenance, replace roof; install with every fifth course doubled; paint green
2) south facade cluttered with electrical meters, hook-ups, masthead, etc. 2 (see figure 91)	2) facade is major location for incoming electrical and telephone services serving several buildings	relocate electrical meters, hook-ups, masthead, and other accretions to utility pole or other less intrusive location
3) no handicapped accessible toilet facilities that meet NPS policy (see figure 92)	3) rehabilitation of comfort station would result in major site intervention (for ramps) and significant modification of facades and entries; no alternative toilets will exist when development moves from Giant Forest	See table 1--Condition Analysis--Market, Note (9). The proposed approach would entail construction of alternate handicapped accessible toilet facilities in the market to avoid destructive impacts at the comfort station and site



Table 2 (continued)

Deficiency	Cause/Notes	Treatment
Site Work and Landscape		
4) negative surface water drainage at southeast corner of building (see figure 91)	4) from roadbank and build-up of natural fill	site work should include a textured surfacing of the walk and relocation of the service road using more compatible arrangement and functional materials to create more sensitive intrusion to site and to provide safer (non slip) access; regrading for positive surface water drainage, and lowering of grade to minimum of 6" below sill beam; hand rail improvements at walk should also be considered
5) site grade too close to wood sill beam	5) build-up of natural fill	
6) existing walk becomes treacherous (slippery) during inclement weather	6) walk is steep and surface becomes slick with water and ice, handrailing on one side	
7) service road insensitive to immediate site <sup>3</sup>	7) road alignment evolved in response to needs of market and maintenance area; service road post-dates comfort station	



Table 2 (continued)

Deficiency	Cause/Notes	Treatment
Rehabilitation for Use--Floors, Walls, Ceilings		
8) exterior walls and ceilings do not meet fire codes <sup>4</sup>	8) no fire-resistive materials used in original construction, less than 1-hour rated	Rehabilitate all walls and ceilings; treatment could/should involve removing existing modern interior finish layer and historic fabric behind, furring out exterior walls as required for insulation and plumbing, sheet-rocking walls and ceilings with required fire-rated gypsum board layer and installing finish surface that is easily cleaned and maintained; attic should be insulated; and additional flooring should be installed in the service area (room 101).
9) exterior walls and attic are sources of heat loss (uninsulated) <sup>4</sup>	9) NPS policy supports energy conservation measures--none are extant	
10) interior surface finishes are difficult to keep <sup>4</sup> clean (not hygienic)	10) existing finish materials unsuitable for housekeeping requirements due to paint build-up	
11) no floor planking at entry inside service area (mechanical space, room 101, see figure 95)	11) finish floor is absent at door	



Table 2 (continued)

Deficiency	Cause/Notes	Treatment
Rehabilitation for Use--Doors, Windows, Fixtures		
12) doors and windows are source of heat loss; see Table 1 note 8	12) same as #9	during rehabilitation of walls and ceilings, repair doors, caulk and weatherstrip doors and windows, double glaze windows with a compatible glazing used uniformly, and install new partitions that are compatible (made of wood or wood appearing) and easy to clean and maintain.
13) doors are aged and damaged	13) normal use	
14) lack of uniform window glazing (see figures 66, 93, and 94)	14) variety of window glazing patterns exist due to replacements at different times with non-matching glass	
15) toilet stall partitions are worn and aged	15) partitions changed in men's restroom during interior rehabilitation in 1964 and they are older (although not original) in women's restroom; all partitions approaching end of life expectancy	



Table 2 (continued)

Deficiency	Cause/Notes	Treatment
Rehabilitation for Use--Electrical and Mechanical		
16) plumbing pipes and fixtures are old but not original; most recent known rehabilitation was in 1964 for men's restroom, pipes and fixtures may be older in women's restroom; pipes have breakage possibility because are in uninsulated walls <sup>5</sup>	16) system approaching end of life expectancy; should be inspected during rehabilitation of walls; replacement is anticipated	During rehabilitation of walls and ceilings, replace plumbing and electrical wiring and install new fixtures for both systems; install a mechanical ventilation system compatible with natural ventilation via windows (the mechanical engineer recommends an exhaust fan operated by a door switch and/or a heat exchanger for energy conservation);
17) electrical wiring outlets and fixtures are old but not original; and are historically incompatible and insufficient (see figures 93 and 94)	17) same as #16; National Electrical Code requires GFCI outlets in restrooms; fluorescent lighting is inappropriate in this historic structure	
18) poor ventilation	18) windows and doors are only means of air change and left open year-round; a heat loss contributor as well	
19) furnace ductwork damaged and loose	19) service area (room 101) is cramped and ductwork is exposed to human contact and insufficiently fastened	Repair or replace furnace ductwork; install fire detection/alarm system for all three buildings that has notification capability at ranger residence and/or park headquarters; temporary measures are appropriate til FY 94
20) absence of fire detection/alarm devices, see table 1 note 11	20) NPS policy requires fire warning devices in historic buildings as used here--none are extant	



Table 2 Notes:

1. Re-Roofing: Original construction specifications and fabric investigation data are sufficient to replace roof in historic manner including green paint (see Appendix G).

2. Utility accretions: Except for services to and for the comfort station, other utility accretions (electrical, telephone, etc.), presently serving other buildings may be entirely removed when development is removed from Giant Forest. The comfort station was not originally electrified and modern services to it should be especially discreet. Underground service is suggested and placing the necessary service panel on the inside of the mechanical room or locating it on a separate power pole some distance from the historic building should be considered in final rehabilitation design.

3. Service road: The Area Study should confirm the need for and configuration, realignment or removal of the service road. Its negative impact at the market (especially at the loading dock) and comfort station and the fact that the road post dates both buildings, leads the authors to recommend its down-signing and the partial restoration of the site.

4. Comfort station walls: The need to rehabilitate market and comfort station exterior walls in order to improve thermal, moisture and fire resistance characteristics has been covered under Table 1, note 6. Two additional factors are particular to the comfort station: the need for a hygienic finish and the presence of historic fabric. Investigations lead to the conclusion that original painted tongued-and-grooved (T&G) paneling is extant beneath the modern (ca. 1960s) layer of painted formica sheeting. The condition, existing quantity, and utility of the paneling cannot be determined without the complete removal of the formica sheeting. For the purposes of this report, it is assumed that the original paneling is deficient as a finish surface for the comfort station or it would not have been covered up. This assumption is based on the probable need to improve the cleanability and the hygienic performance of the walls and eliminate graffiti carving opportunities, and that the T&G paneling did not serve this need.

Over time, with the painting and repainting of the formica sheeting, it too has become less than satisfactory as a cleanable finish surface. This surface must be replaced to meet the needs of the proposed continued use of the comfort station. The proposed final design for interior rehabilitation should consider the salvage and reuse, if possible, of some of the T&G. For example, a cleanable surface such as Marlite could be employed on walls up to the window level and T&G used above and on the ceiling.

5. Plumbing. The Area Study should resolve the issue of effluent disposal for the reduced scale of Giant Forest Village. This HSR assumes the continued use of the existing or a similar system although the draft development concept plan (1977) recommends a switch to a "self-contained recirculating toilet system" (see Mechanical Engineers Report, Appendix D).



Table 3. Condition Analysis--Ranger Residence/Garage

Deficiency	Cause/Notes	Treatment
<b>Building Preservation</b>		
1) wood shingle roof and sheet metal snow flashing is aged and expected to fail by 1991; see table 2 note 1	1) normal exposure to elements	For exterior preservation reshingle and reflash roof; new roof to meet original specification and color; replace the gutter/downspout system with downspout emptying into an underground drainage line (and/or regrade site at southeast); repaint exterior in original two color brown and green scheme (consistent with market and comfort station); repoint chimney and foundation; remove debris blocking crawl space vent and repair or rebuild access door and vent screen
2) gutter/downspout system deteriorated and inadequate (see figure 99)	2) same as #1; downspout empties next to building	
3) existing exterior paint finish is deteriorated; see table 1 note 3	3) same as #1	
4) mortar voids in chimney and foundation	4) same as #1; poor original pointing	
5) crawl space access door and vent screen have deteriorated (see figure 96 and 97)	5) same as #1	



Table 3 (continued)

Deficiency	Cause/Notes	Treatment
<u>Site Work and Landscape</u>		
6) negative surface water drainage towards house (see figure 96)	6) from hillside and build-up of natural fill	rebuild stone retaining wall and regrade immediate site to achieve positive surface water drainage; repair or replace gate and fence
7) natural debris build-up along west and south foundation (see figure 96)	7) historic stone retaining wall has collapsed	wooden elements and/or hardware; restore walk by removing soil build-up
8) gate loose at hinges and fence deteriorated (see figure 97)	8) same as #1	
9) walk has deteriorated (see figure 69)	9) same as #1, soil erosion	



Table 3 (continued)



Deficiency	Cause/Notes	Treatment
Rehabilitation for Use		
10) existing crawl space plumbing is old and unprotected against freezing	10) plumbing approaching end of life expectancy and crawl space unheated	for continued use of residence, replace and insulate crawl space plumbing;
11) underground heater fuel tank is an environmental hazard by current standards	11) do not know age and physical condition of tank	replace heater fuel tank (consider unobtrusive above grade location); install fire detection/alarm system for all three buildings that have notification capability at park headquarters; temporary fire detection/alarm devices are appropriate until FY 94 construction; install GFCI per code in residence and garage; clean out chimney and install flue lining and new spark arrestor compatible with building appearance; a snow tunnel compatible with residence appearance should replace the existing
12) absence of fire detection/alarm devices; see table 1 note 11; no GFCIs	12) NPS policy requires fire warning devices in historic buildings as used here	
13) inadequate chimney spark arrestor (see figure 100)	13) fire hazard exists to structure and immediate site from fireplace	
14) snow tunnel is an intrusion on historic scene (see figures 99 and 101)	14) make-shift design now left up year-round functions well, but is not in character	When the snow tunnel needs replacing, designers should use the compatibility guidelines in the "Recommendations" subsection

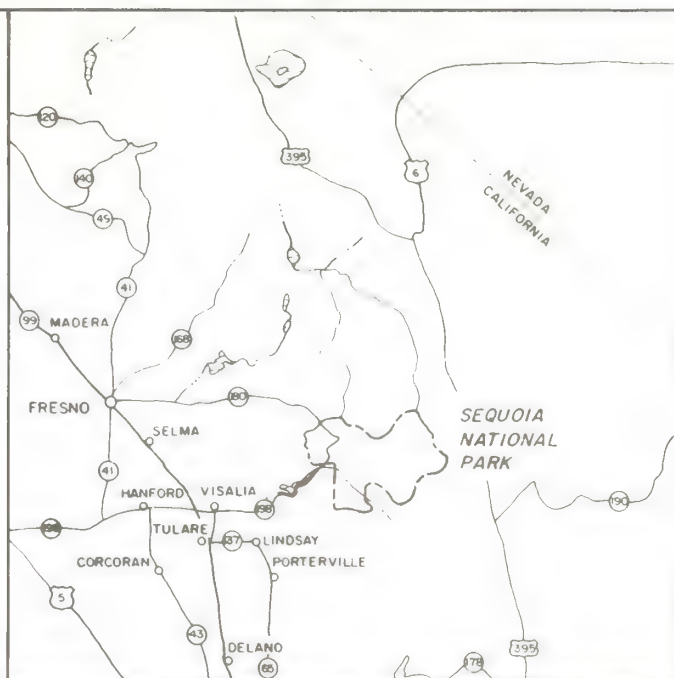






# LEGEND

- BOUNDARY
- COUNTY LINE
- RIVER
- GRAVEL ROAD
- PAVED ROAD
- HQ. HEADQUARTERS
- V.C. VISITOR CENTER
-  RANGER STATION
-  CAMPGROUND



NORTHERN  
CALIFORNIA

20 0 20  
SCALE OF MILES



## GIANT FOREST VILLAGE



SEQUOIA  
NATIONAL PARK

0 20 60 140 300  
SCALE OF FEET



S E

### CONDITION ASSESSMENT -DEFICIENCIES

R	DESIGNED C FRAZIER C KENKEL	TITLE OF DRAWING MARKET, COMFORT STATION AND RANGER RESIDENCE		DRAWN BY 102	
	DRAWN 88	LOCATION WITHIN PARK		25,001	
	DRAFTING BR.	GIANT FOREST VILLAGE		PKG NO	
	TECH REVIEW	NAME OF PARK		SHEET	
ES INTERIOR	G HIGGINS	SEQUOIA NATIONAL PARK		2000	1
ERVICE CENTER	DATE 12/87	REGION WESTERN	COUNTY TULARE	OF 12	
			STATE CALIFORNIA		



# LEGEND

- BOUNDARY
- COUNTY LINE
- RIVER
- GRAVEL ROAD
- PAVED ROAD
- HQ. HEADQUARTERS
- V.C. VISITOR CENTER
- RANGER STATION
- CAMPGROUND

# SYMBOLS

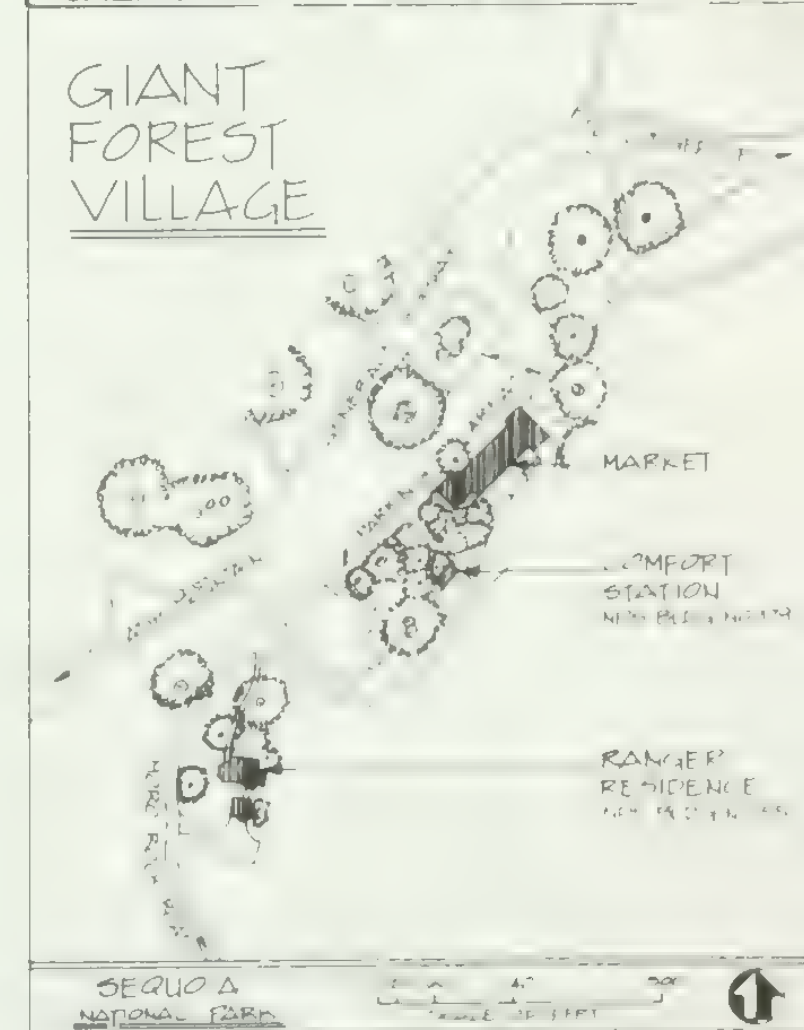
- ASPHALT AND CONCRETE (PLAN AND ELEVATION)
- CONCRETE ELEVATION
- EARTH SECTION
- STONE SECTION
- TILE (PLAN)
- WET SECTION

# ABBREVIATIONS

- BUILDING
- CIRCA
- CEDAR
- CONC
- CONCRETE
- EA
- ELECT
- FOUND
- FEET
- HANDICAPPED
- HP
- INFO
- NUMBER
- NPS
- NATIONAL PARK SERVICE
- ON CENTER
- SEQUOIA
- SUGAR P
- SUGAR PINE
- TIC
- TECHNICAL INFORMATION CENTER
- TYP
- TYPICAL
- VALVE PIT
- AND

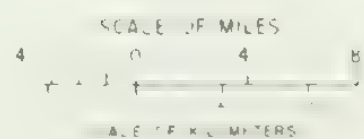
# INDEX

SHEET	TITLE OF SHEET
1	OVERLAP
2	ACCESSIBILITY- ALTERNATIVE #1
3	ACCESSIBILITY- ALTERNATIVE #2
4	MARKET AND INFORMATION SITE DEFICIENCIES
5	MARKET PLAN DEFICIENCIES
6	MARKET ELEVATION DEFICIENCIES
7	MARKET ELEVATION DEFICIENCIES
8	MARKET SECTION DEFICIENCIES
9	COMFORT STATION DEFICIENCIES
10	RANGER RESIDENCE JARVIS DEFICIENCIES
11	RANGER RESIDENCE PLAN DEFICIENCIES
12	RANGER RESIDENCE ELEVATION DEFICIENCIES



THIS PROJECT  
GIANT FOREST VILLAGE

SEQUOIA NATIONAL PARK



# CONDITION ASSESSMENT -DEFICIENCIES

FOR HSR		TITLE OF DRAWING		DRAWN BY	
UNITED STATES		MARKET, COMFORT STATION		C. FRAZIER	
DEPARTMENT OF THE INTERIOR		AND RANGER RESIDENCE		C. KENNEL	
NATIONAL PARK SERVICE		GIANT FOREST VILLAGE		DRAFTING BR	
DENVER SERVICE CENTER		SEQUOIA NATIONAL PARK		TECH REVIEW	
		TULARE, CALIFORNIA		DATE	
				1/87	
				SHEET	
				1	
				OF 12	

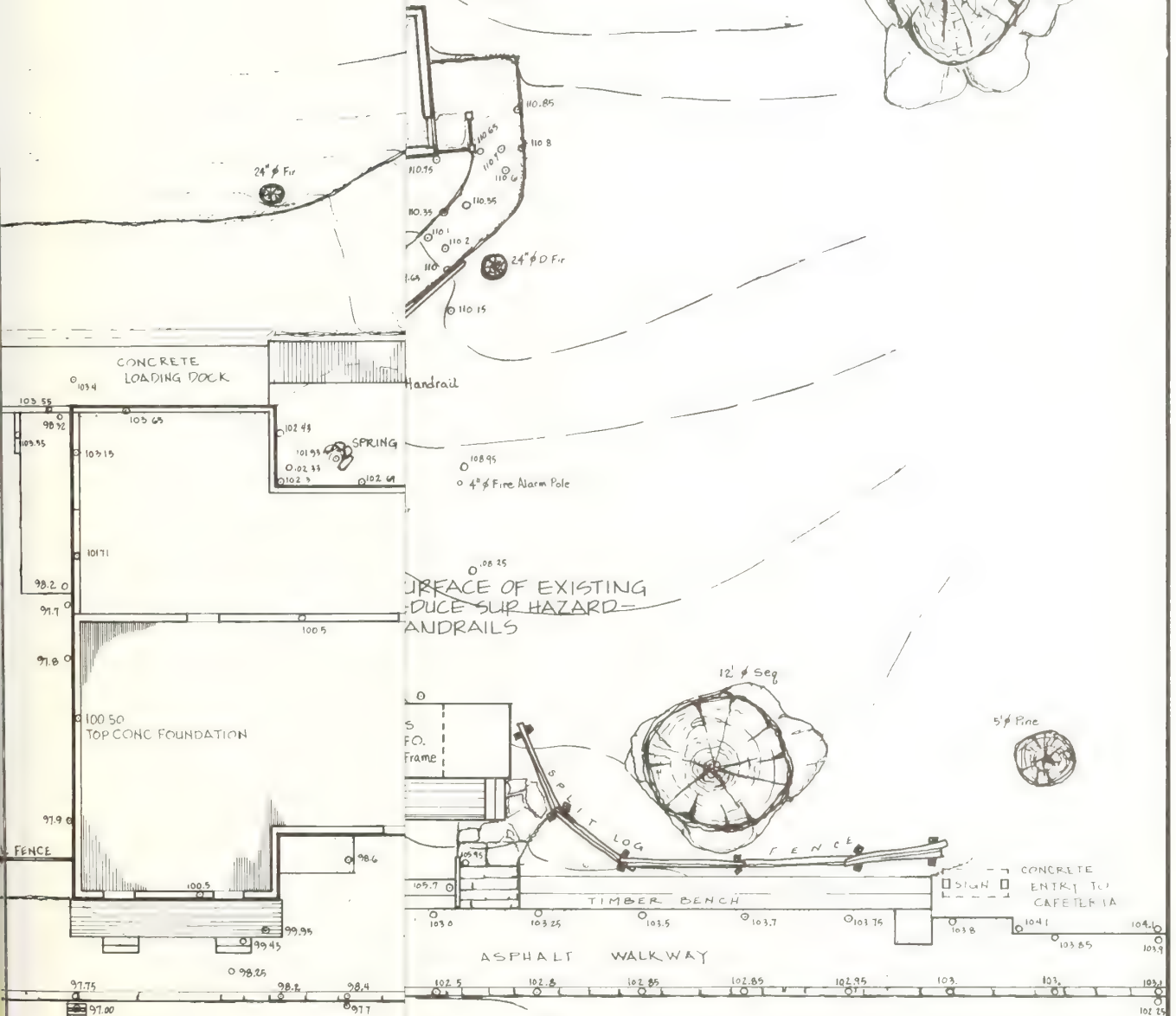


MODIFICATIONS -  
FUNCTION FOR NON-DISABLED

STATION

14'  $\phi$  Seg

12'  $\phi$  Seg

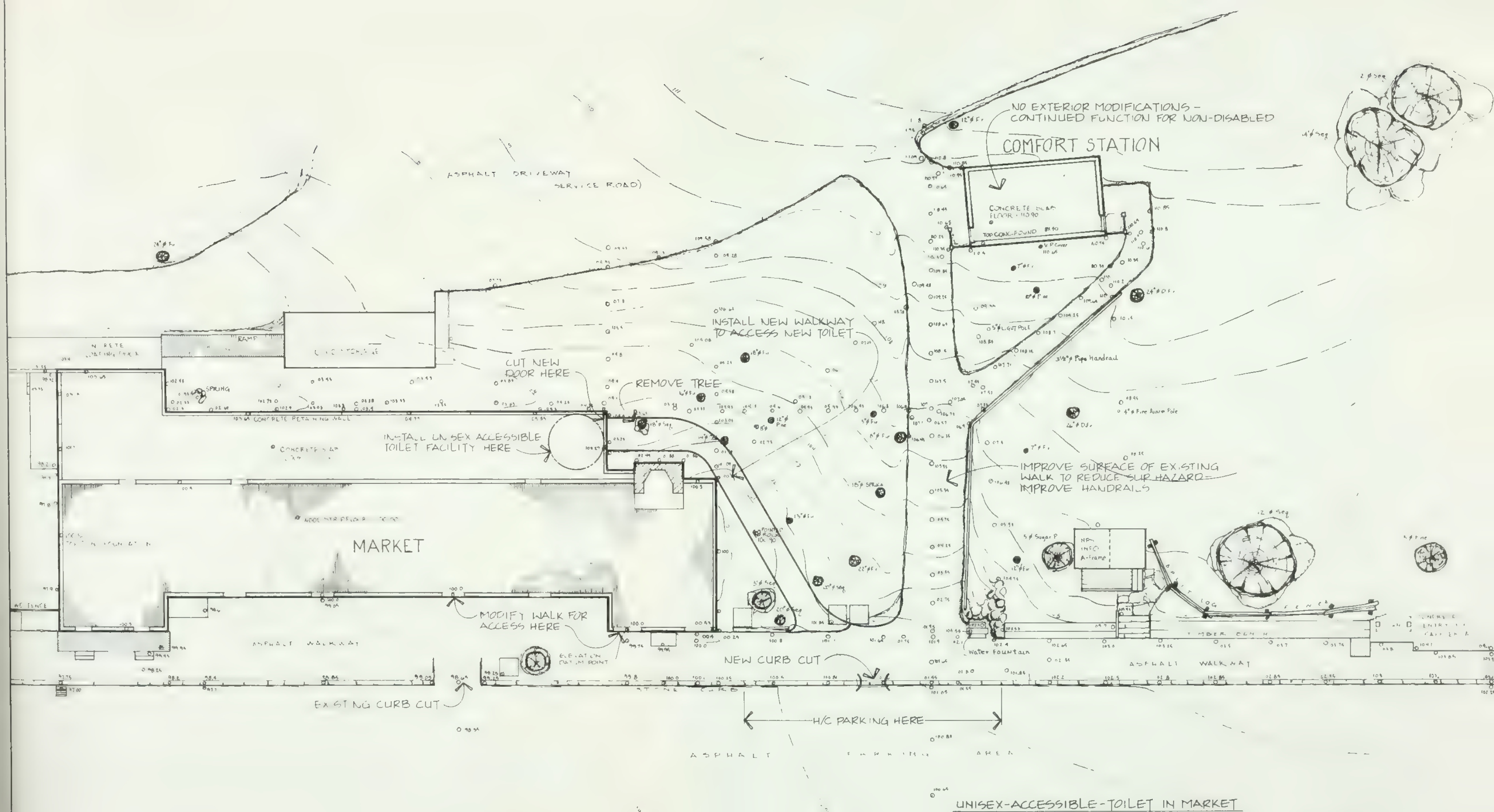


E-TOILET IN MARKET

DESIGNED C FRAZIER C KENKEL	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
DRAWN: C FRAZIER		MARKET AND COMFORT STATION SITE PLAN	102
TECH. REVIEW G HIGGINS		ACCESSIBILITY ALTERNATIVE #1	25,001
DATE: 12/87			PKG. NO. 2000
			SHEET 2
			OF 12

SEE DATA: TOPO IS APPROXIMATE & EXTRAPOLATED FROM POINT ELS





SITE DATA: TOPOGRAHY, ELEVATIONS DERIVED FROM POINT ELEVATIONS SHOWN. ELEV. READINGS & FEATURE PLACEMENTS BY FRAZIER, KENNEL & SILVA 9/86 & 10/86  
 1. 1/8" = 1'-0"  
 2. West side parking 97.95  
 3. Curb on West side 97.95

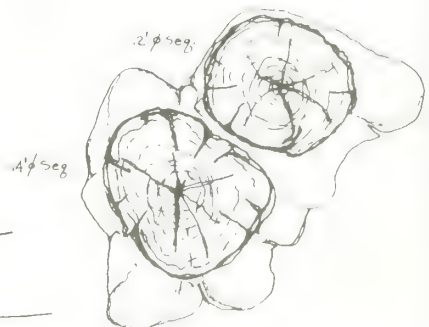
SCALE 1/8" = 1'-0"  
 0 10 20 30 40 50 60 70 80 90 100  
 32 FT PLAN-TRUE

DESIGNED C FRAZIER C KENNEL	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN C FRAZIER		MARKET AND COMFORT STATION SITE PLAN	102
TECH REVIEW G HIGGINS		ACCESSIBILITY	25,001
DATE 12/87		ALTERNATIVE #1	PKG NO. 2000
			SHEET 2
			OF 12

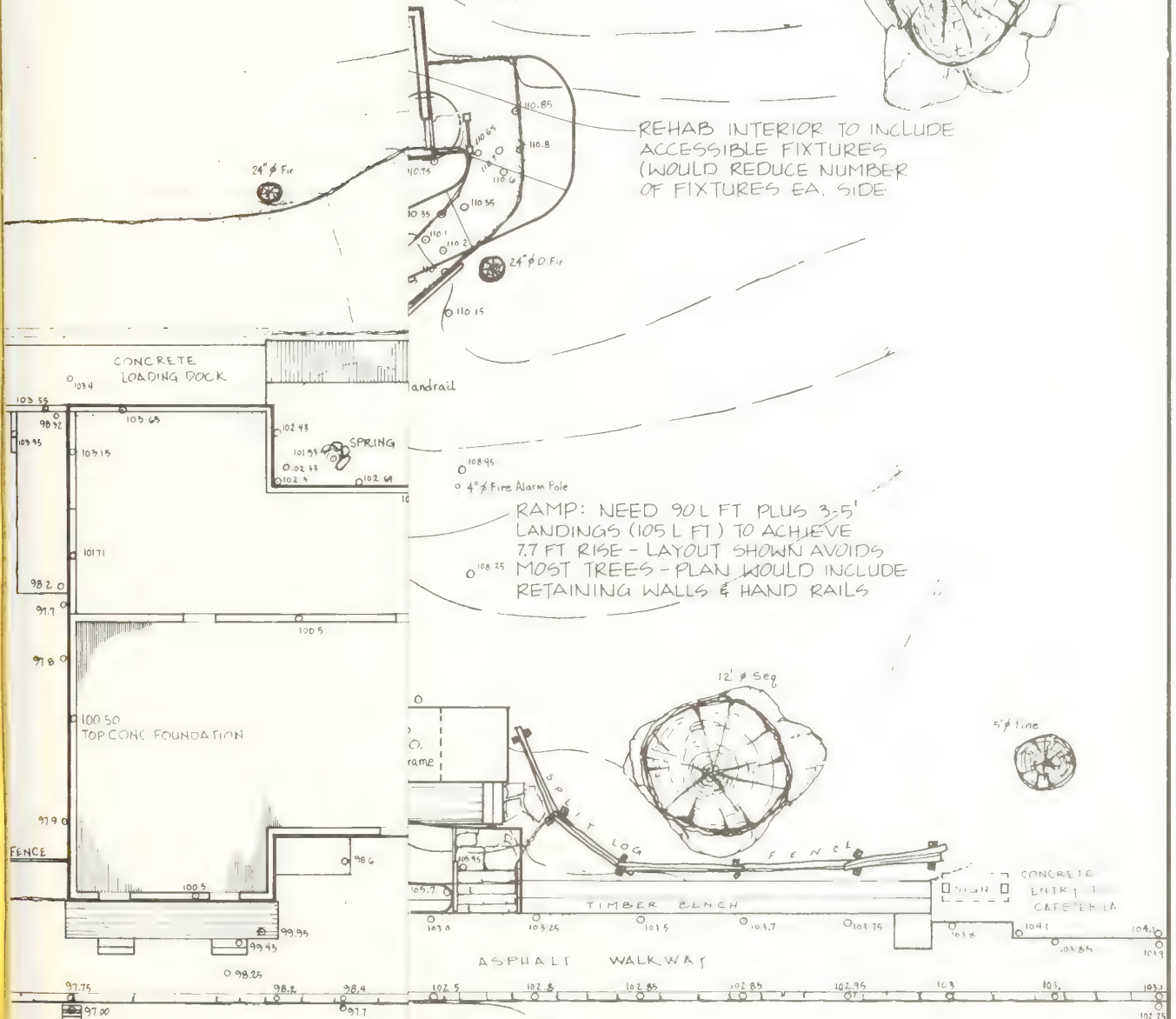


WINDOWS & PORTION OF  
RAL FRAME - INSTALL  
S - REBUILD PRIVACY  
TO INCREASE CLEARANCE

STATION



REHAB INTERIOR TO INCLUDE  
ACCESSIBLE FIXTURES  
(WOULD REDUCE NUMBER  
OF FIXTURES EA. SIDE



B CUT

HANDICAPPED ACCESSIBLE

DESIGNED  
C. FRAZIER  
C. KENKEL  
DRAWN  
C. KENKEL  
TECH. REVIEW  
G. HIGGINS  
DATE 12/87

SUB SHEET NO.

TITLE OF SHEET

MARKET AND COMFORT  
STATION SITE PLAN  
ACCESSIBILITY  
ALTERNATIVE #2

DRAWING NO.

102  
25,001

PKG.  
NO.  
2000

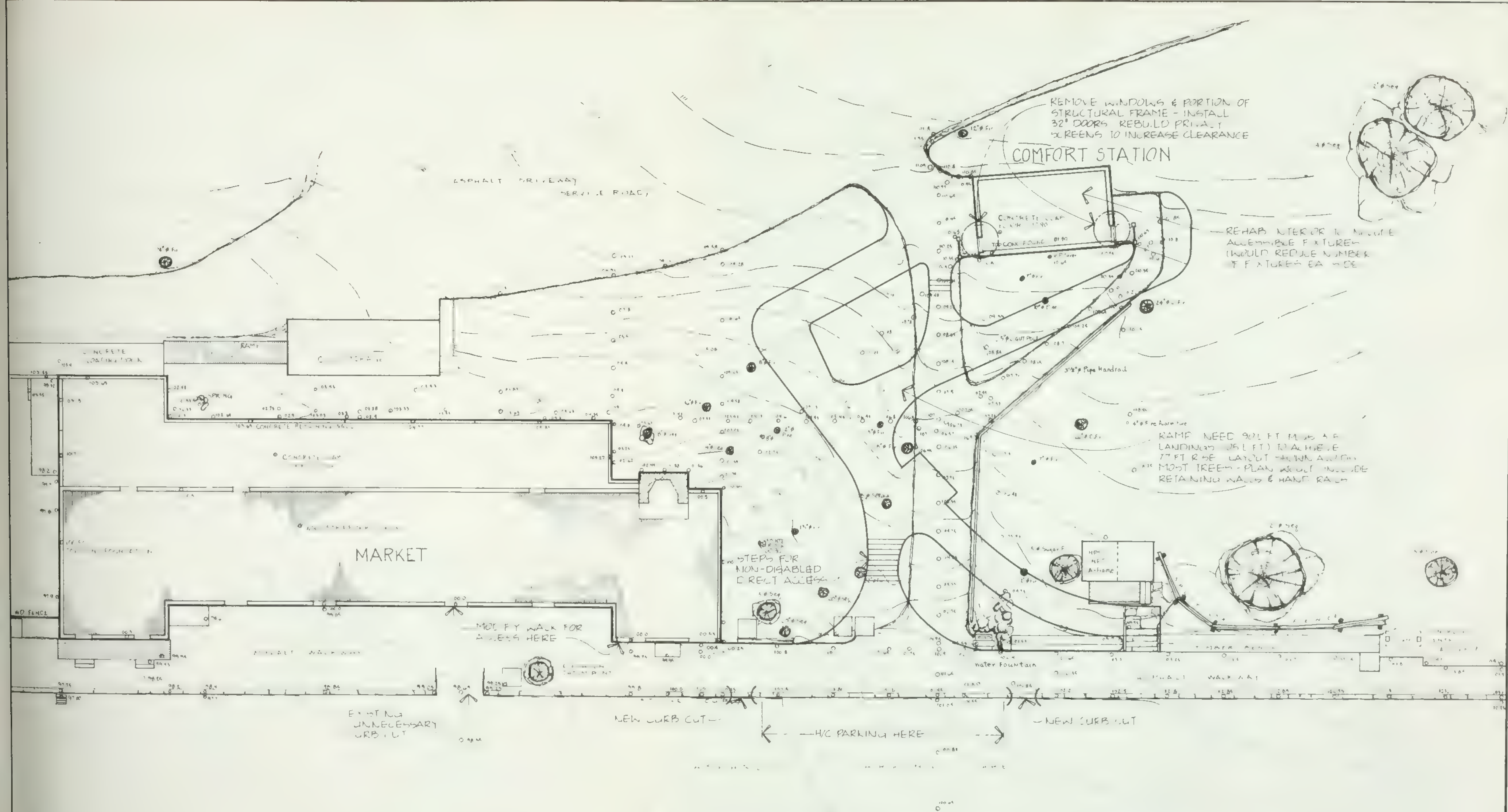
SHEET

3

OF 12

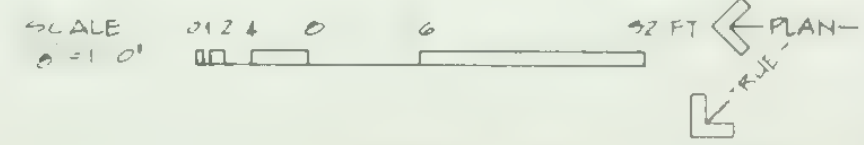
DATA: TOPO IS APPROXIMATE & EXTRAPOLATED FROM POINT ELEV





REQUIREMENTS TO MAKE EXISTING COMFORT STATION HANDICAPPED ACCESSIBLE

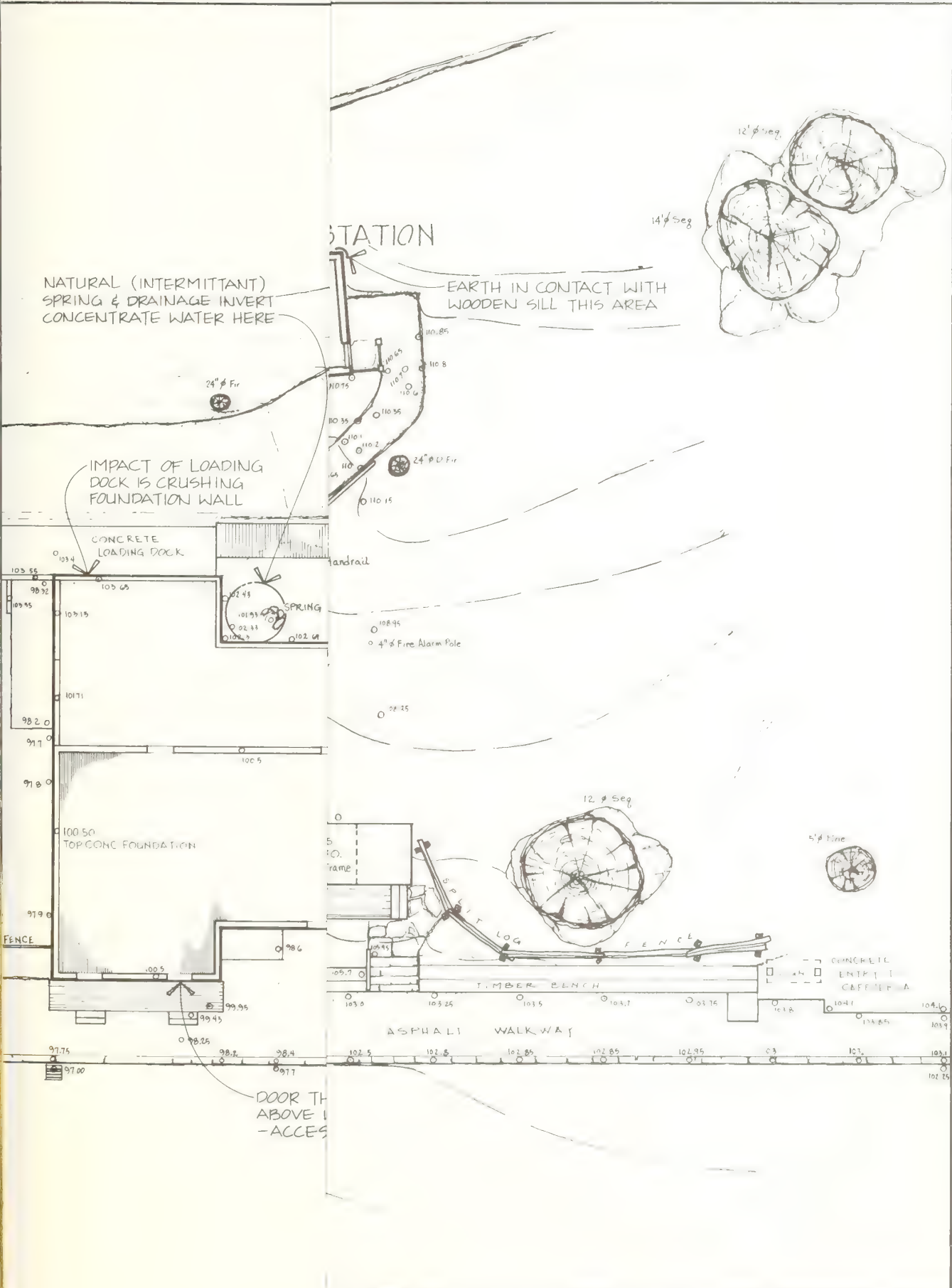
0 West side parking 97.44  
 0 Curb on West side 97.44



DESIGNED C. FRAZER C. KENNEL	S.B. SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN C. KENNEL		MARKET AND COMFORT STATION SITE PLAN	102
TECH. REVIEW G. HUGGINS		ACCESSIBILITY	25,001
DATE 12/87		ALTERNATIVE #2	
	PKG NO.	SHEET	
		3	
		OF 12	

SITE DATA: TOPOGRAHY MATERIALS OBTAINED FROM 1987 ELEVATION MAP. ELEVATIONS ARE FROM MEAN SEA LEVEL. DRAWN BY C. FRAZER, C. KENNEL, & G. HUGGINS. 12/87.





DESIGNED  
C FRAZIER  
C KENKEL

DRAWN  
C KENKEL

TECH. REVIEW  
G HIGGINS

DATE 12/87

SUB SHEET NO

TITLE OF SHEET

**MARKET AND COMFORT  
STATION SITE PLAN  
SITE DEFICIENCIES**

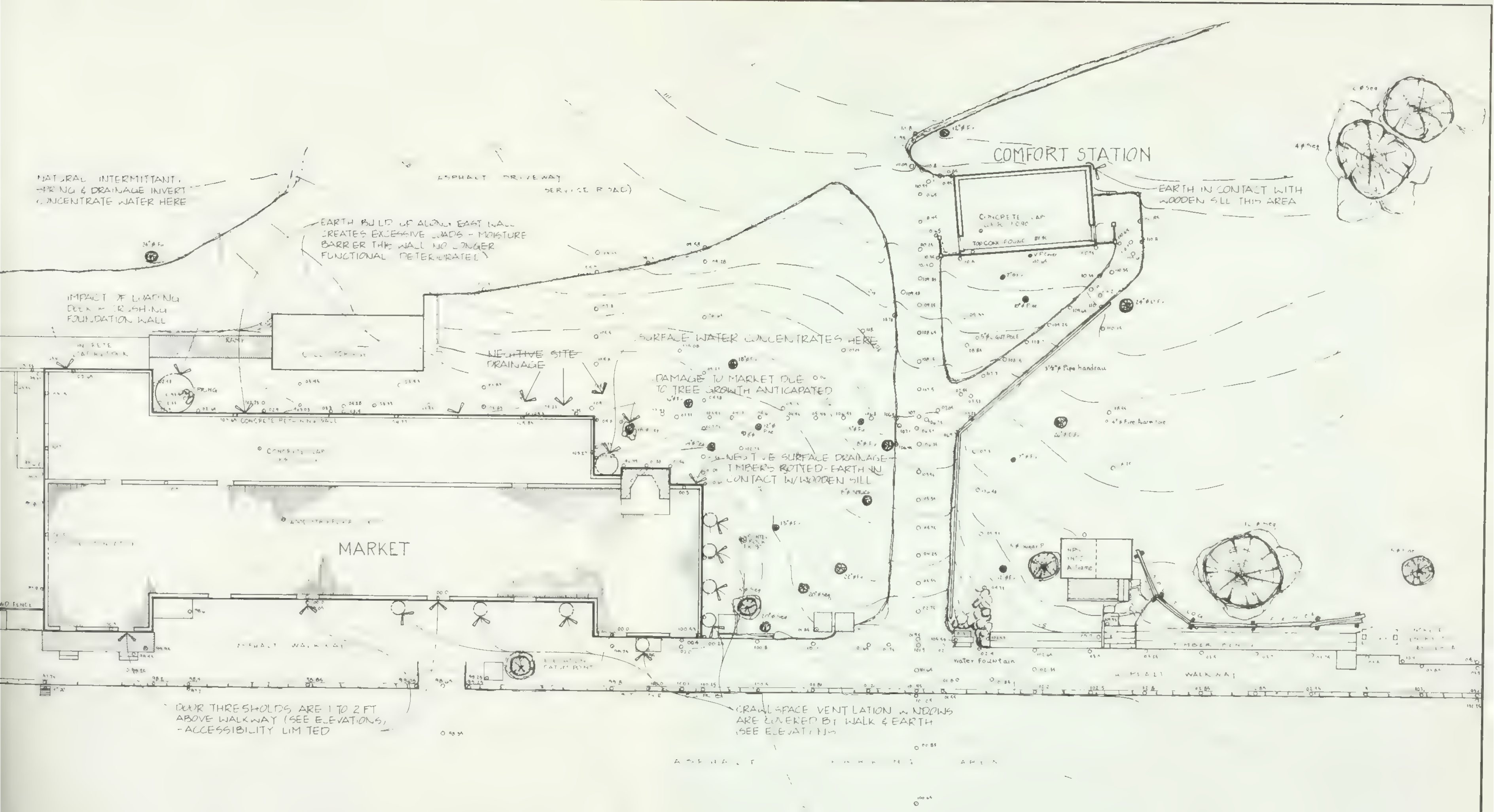
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102  
25,001

PKG NO  
200D

SHEET  
4

OF 12

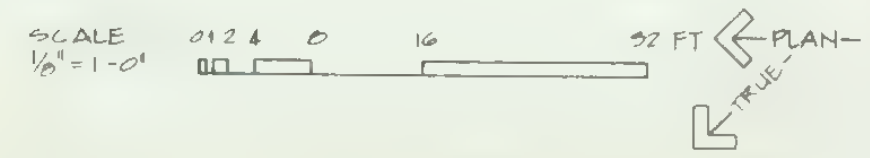




OUR THRESHOLDS ARE 1 TO 2 FT ABOVE WALKWAY (SEE ELEVATIONS) - ACCESSIBILITY LIMITED

CRAWLSPACE VENTILATION IN ROWS ARE COVERED BY WALK & EARTH (SEE ELEVATIONS)

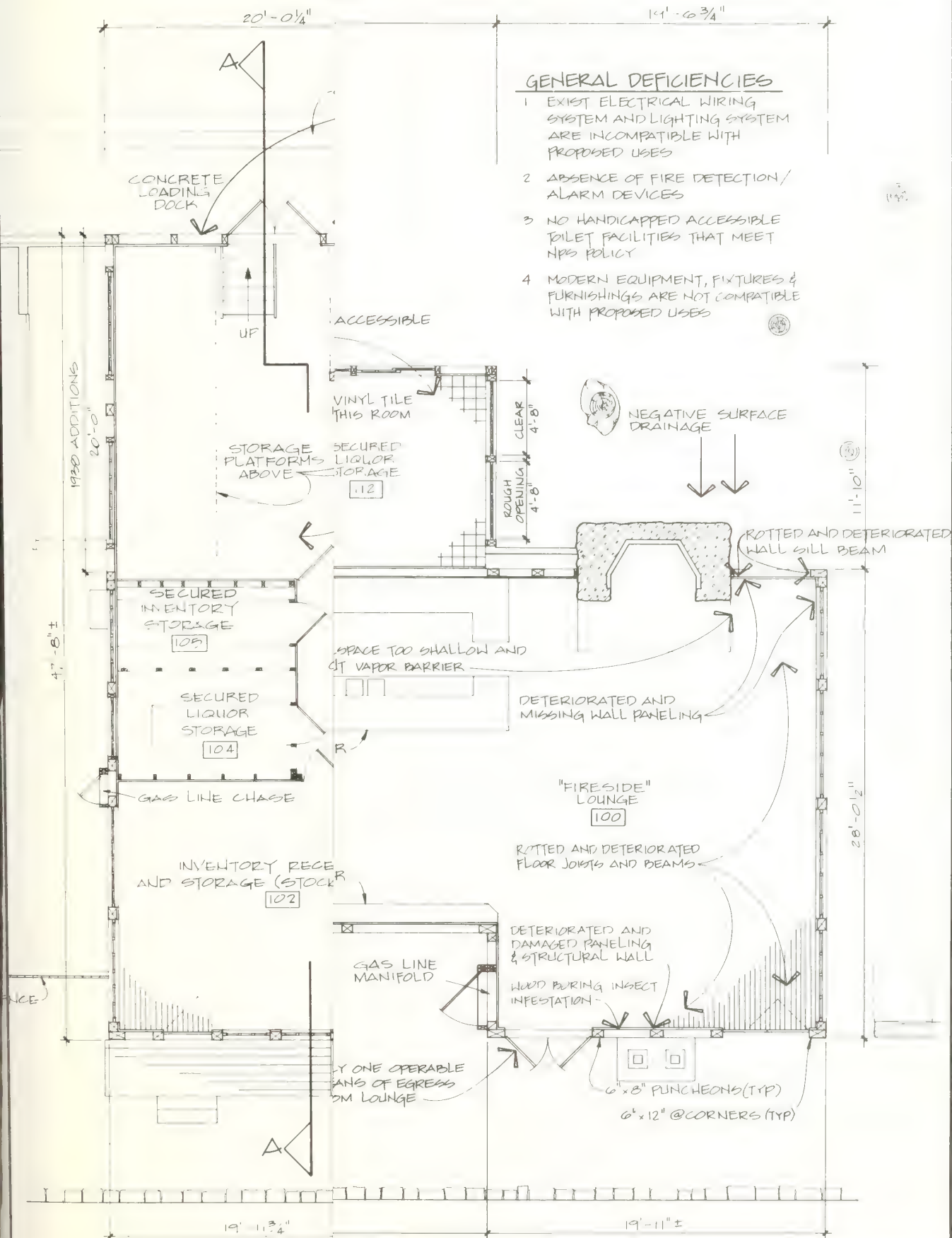
West side parking 97.54  
Curb on West side 97.95



SITE DATA: TOPOGRAPHY, LIMITS & UTILITIES DERIVED FROM ELEVATION SURVEY, ELEV. READINGS & FEATURE MEASUREMENTS BY FRAZIER, KENNEL & SILVA 9/86 & 10/86

DESIGNED C FRAZIER C KENNEL	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN C KENNEL		MARKET AND COMFORT STATION SITE PLAN SITE DEFICIENCIES	102 25,001
TECH REVIEW G HIGGINS			PKG NO. 2010
DATE 12/87			SHEET 4
			OF 12





DESIGNED  
C FRAZIER  
C KENKEL  
DRAWN  
C KENKEL  
TECH. REVIEW  
G HIGGINS  
DATE 12/87

SUB SHEET NO

TITLE OF SHEET

# MARKET FLOOR PLAN DEFICIENCIES

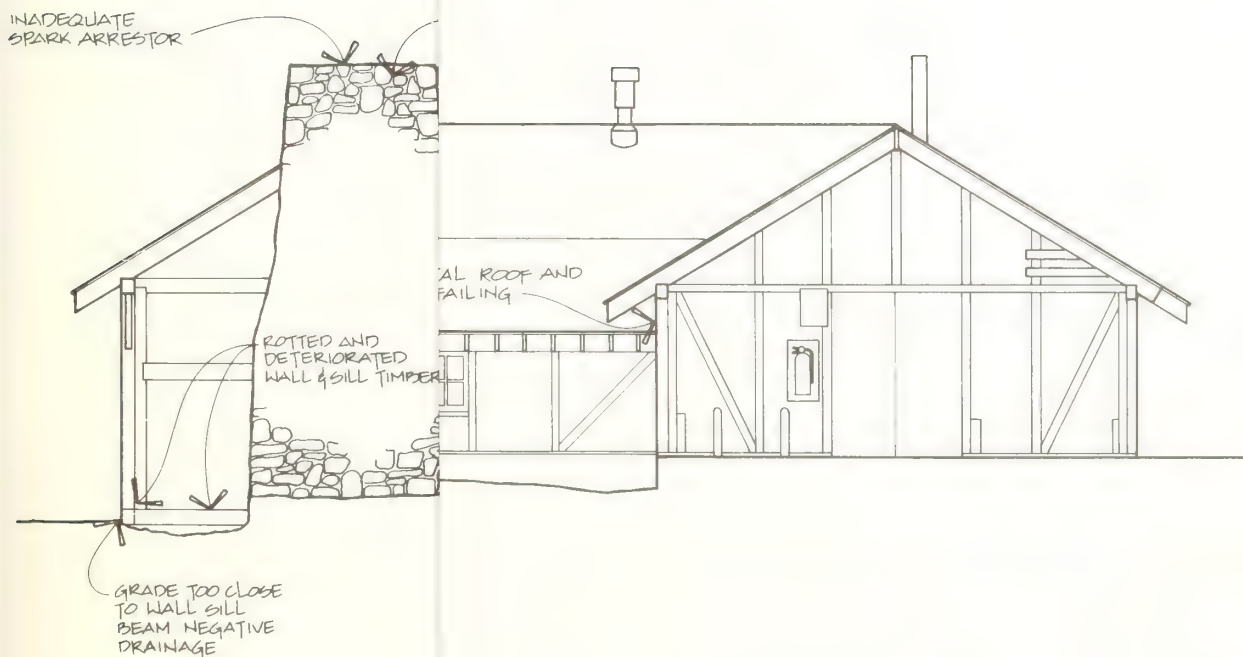
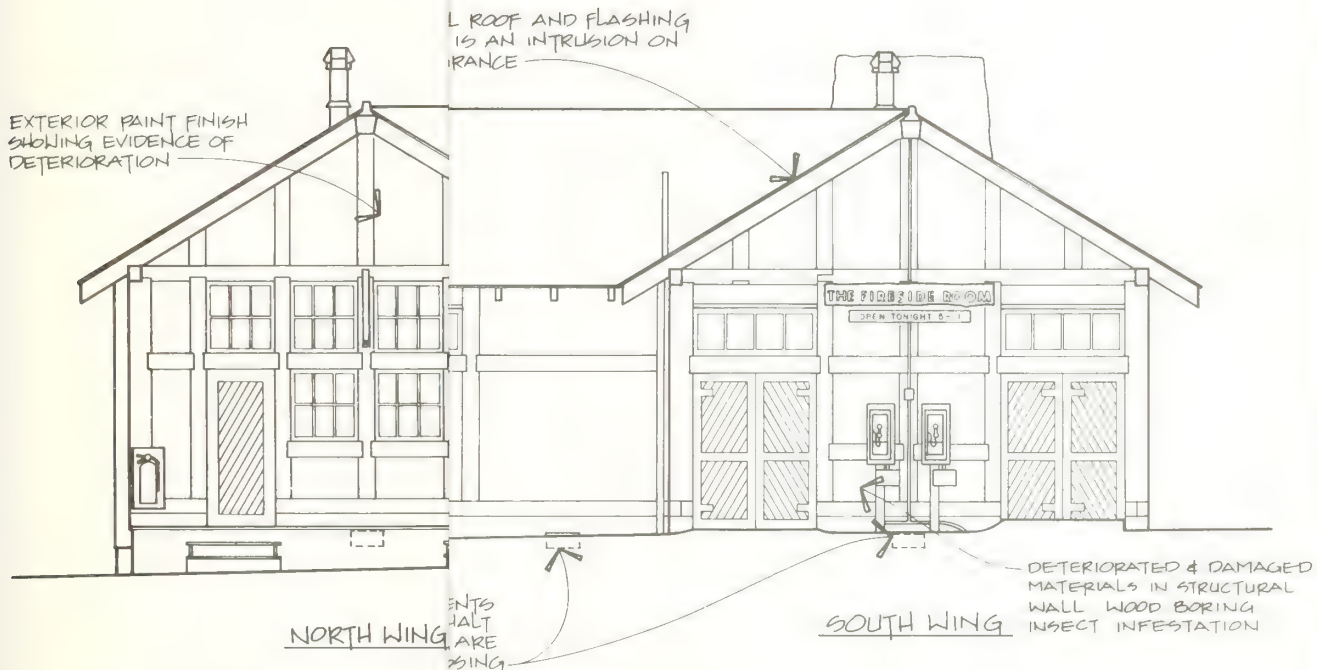
DRAWING NO  
102  
25,001

PKG NO.	SHEET
2000	5
	OF 12









DESIGNED  
C FRAZIER  
C KEKEL  
DRAWN:  
C KENKEL  
TECH. REVIEW:  
G. HIGGINS  
DATE 12/87

SUB SHEET NO

TITLE OF SHEET

# MARKET ELEVATIONS DEFICIENCIES

DRAWING NO.

102  
25,001

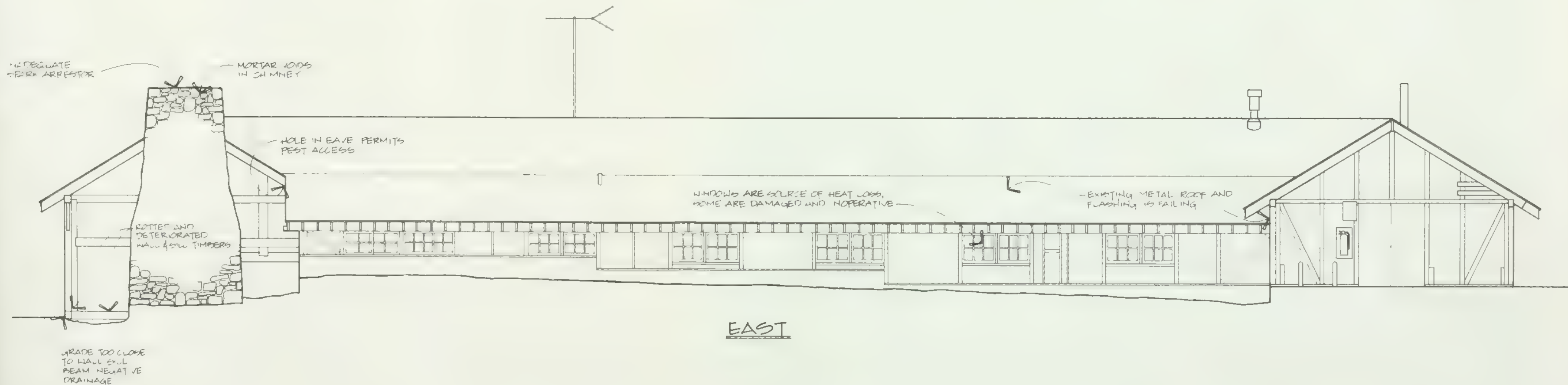
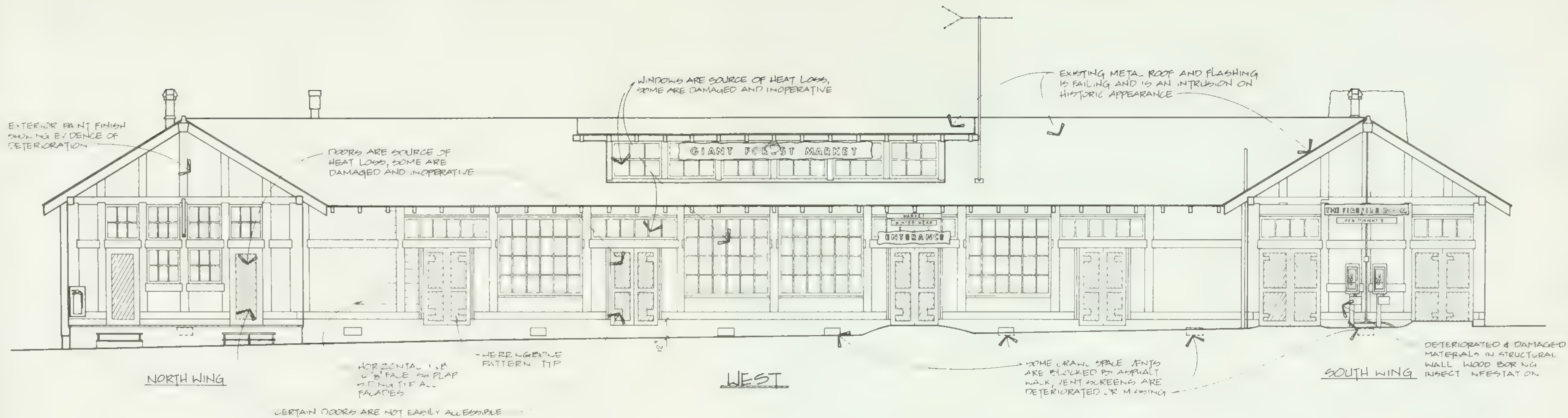
PKG.  
NO.  
2000

SHEET

6

OF 12





SCALE 4" = 0' 0 1 2 4 8 6 FEET

NOTE GRADE IS SHOWN AT BUILDING LINE, PLYWOOD COVERING SOME WINDOWS IS OMITTED FOR CLARITY

DESIGNED C. FRAZIER C. KENKEL	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN C. KENKEL		MARKET ELEVATIONS DEFICIENCIES	102 25,001
TECH. REVIEW G. HIGGINS			PKG NO. 2000
DATE 12/87			SHEET 6 OF 12



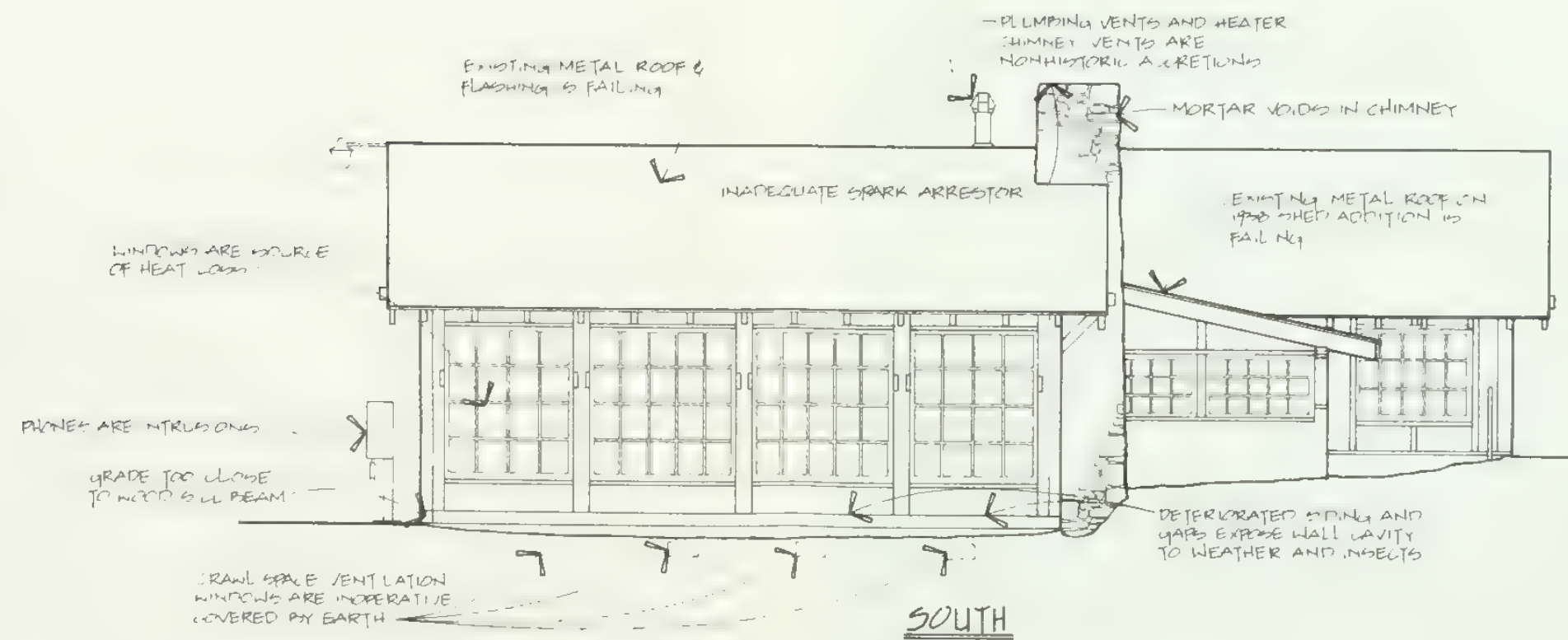
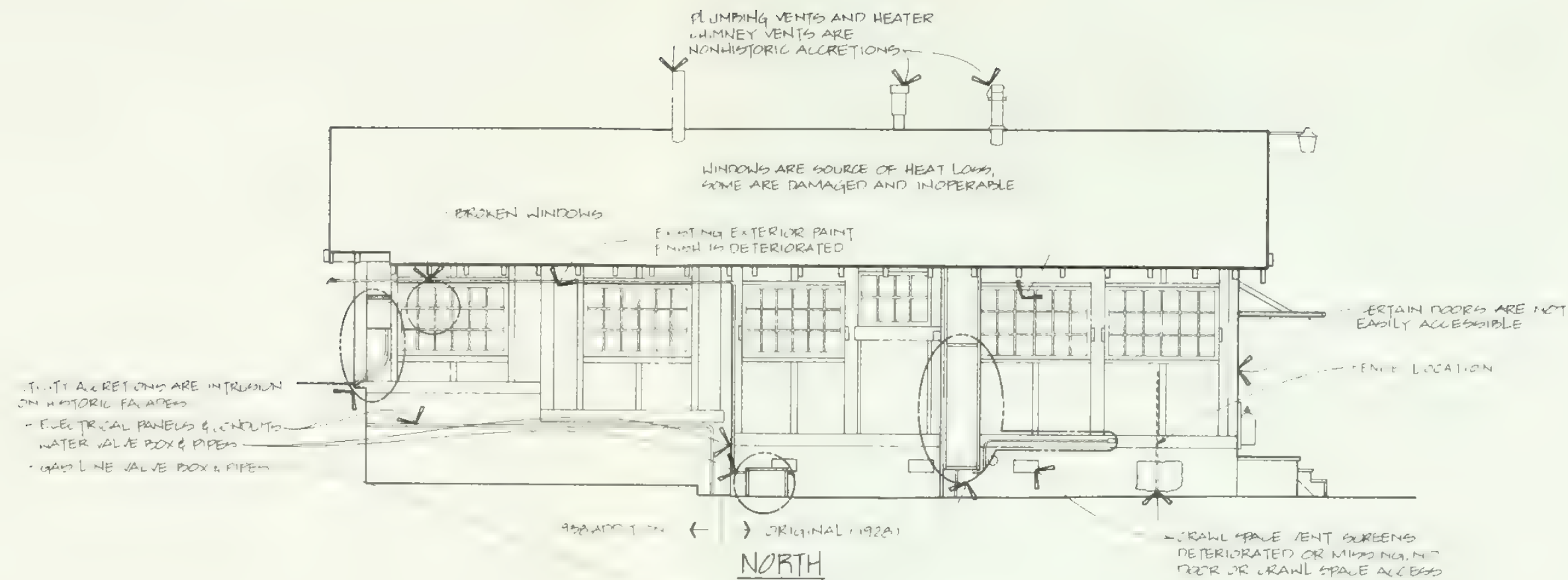
RTAIN DOORS ARE NOT  
BILY ACCESSIBLE

ICE LOCATION

SENS  
ING, NO  
ACCESS

DESIGNED C PRAZIER C KENKEL	SUB SHEET NO	TITLE OF SHEET MARKET ELEVATIONS DEFICIENCIES	DRAWING N 102 25,001	
DRAWN C KENKEL			PKG NO. 2000	SHEET 7
TECH. REVIEW G HIGGINS			OF 12	
DATE 12 /87				





SCALE 1/4" = 1' 0"

DESIGNED C. KENNEL	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN BY C. KENNEL		MARKET ELEVATIONS DEFICIENCIES	102
TECH. REVIEW G. HIGGINS			25,001
DATE 12/87			PKG NO. 0000
			SHEET 7
			OF 12



1/2 CONCRETE RETAINING  
RESTRESSED AND DAMP-PROOF  
NO LONGER EFFECTIVE

REFACE DRAINAGE

2/4 LOADING DOCK  
5 LIVE LOAD ON  
ALL S

DESIGNED  
C. FRAZIER  
C. KENKEL  
DRAWN: *SM*  
C. FRAZIER  
TECH. REVIEW:  
G. HIGGINS  
DATE: 12/87

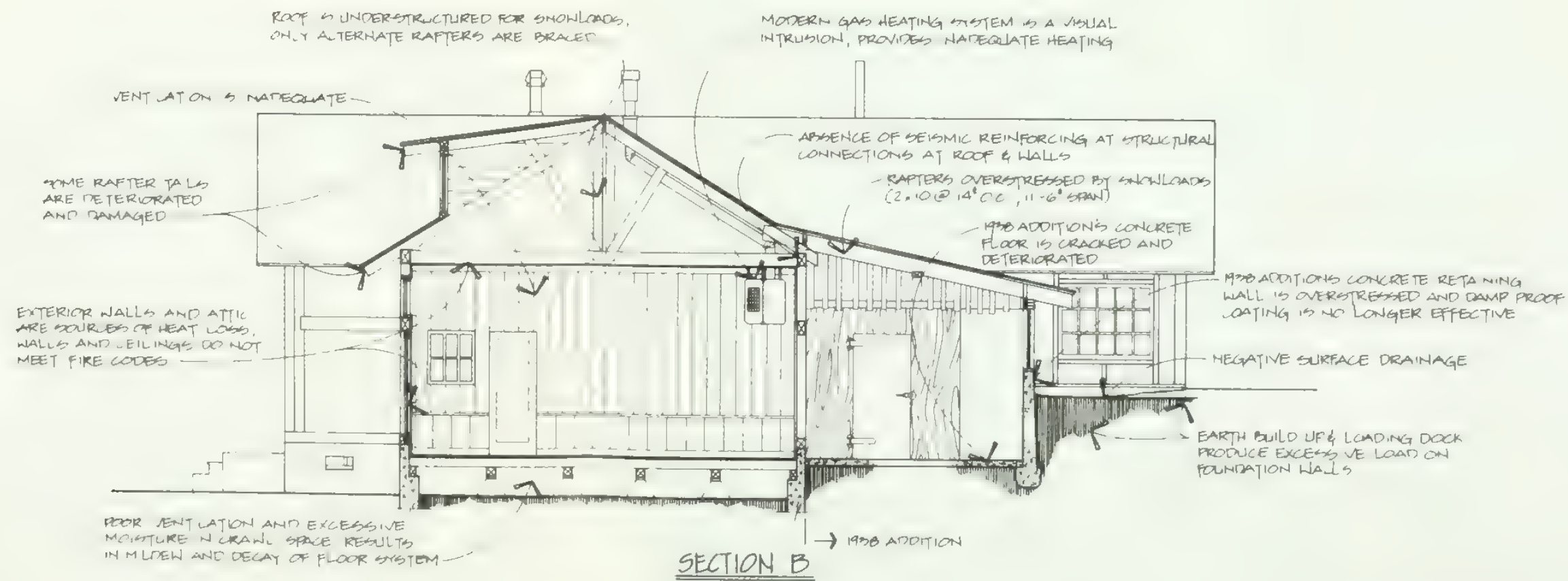
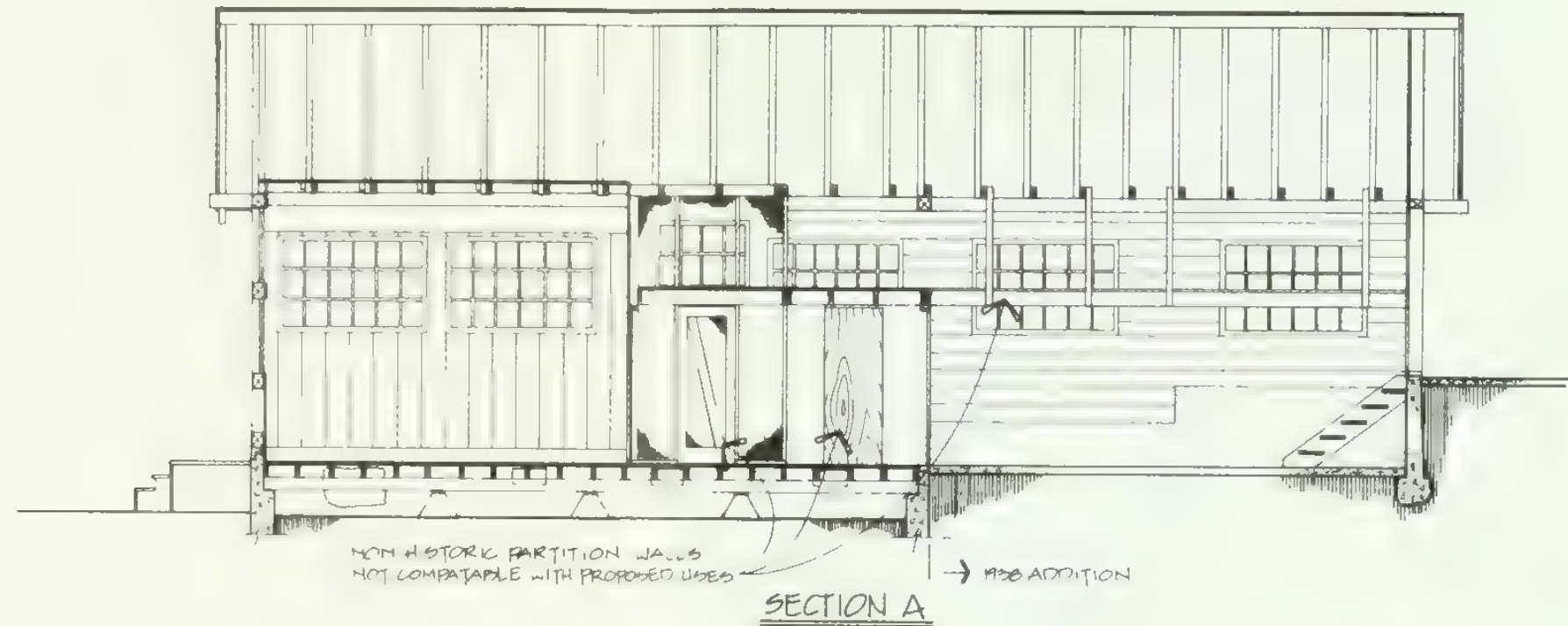
SUB SHEET NO.

TITLE OF SHEET  
MARKET  
SECTIONS  
DEFICIENCIES

DRAWING NO.  
102  
25,001

PKG.  
NO.  
2000  
SHEET  
8  
OF 12





SCALE  
1/4" = 1' 0"

0 1 2 4 8 16 FT

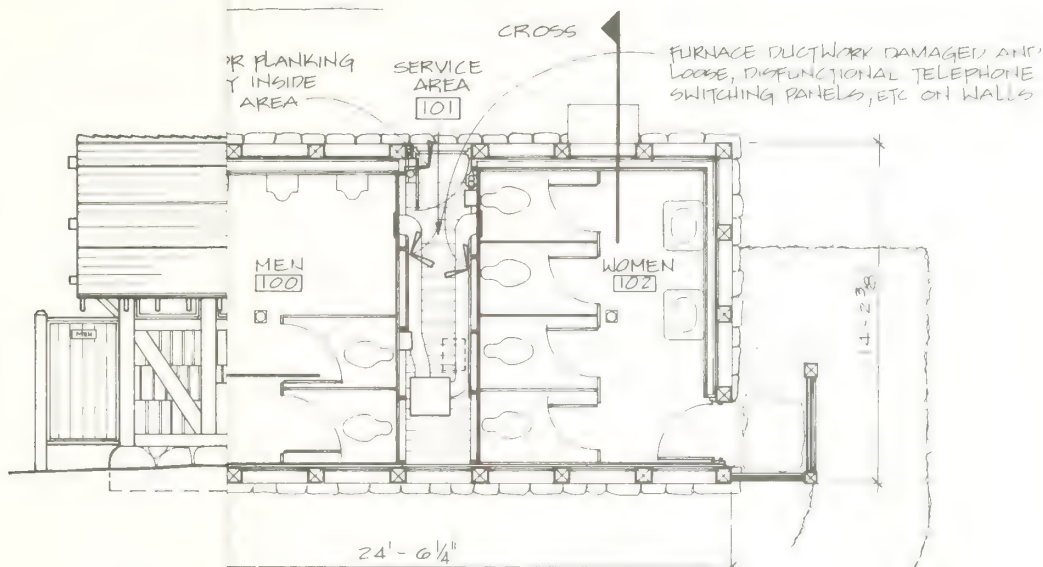
DESIGNED  
C. FRAZIER  
C. KENNEL  
DRAWN BY  
C. FRAZIER  
TECH. REVIEW  
G. HIGGINS  
DATE 12/87

SUB SHEET NO.

TITLE OF SHEET  
**MARKET  
SECTIONS  
DEFICIENCIES**

DRAWING NO.  
102  
25,001  
PKG NO.  
2000  
SHEET  
8  
OF 12





## FLOOR PLAN

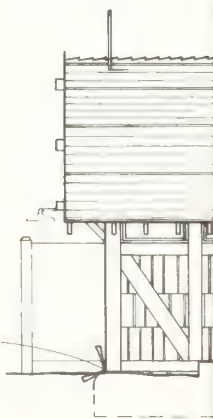
### NOTES

ELECTRICAL WIRING, OUTLETS AND FIXTURES ARE OLD BUT NOT ORIGINAL AND ARE INSUFFICIENT

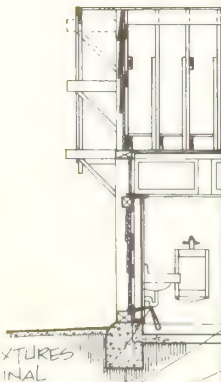
ABSENCE OF FIRE DETECTION / ALARM SYSTEM

NO HANDICAPPED ACCESSIBLE TOILET FACILITIES THAT MEET NPS POLICY  
REHABILITATION OF COMFORT STATION WOULD MEAN MAJOR SITE INTERVENTION (FOR RAMPS) AND MODIFICATION OF FACADES AND ENTRIES  
SEE ACCESSIBILITY ALTERNATIVES, SHEETS 2 & 3  
EXISTING DOOR OPENINGS ARE 28\"

SITE GRADE TOO CLOSE TO WOOD SILL BEAM



UMBILICAL PIPES AND FIXTURES ARE OLD BUT NOT ORIGINAL  
THESE HAVE POSSIBILITY OF LEAKAGE BECAUSE OF INSULATED WALLS



SCALE  
1/4" = 1'-0"  
ALL DRAWINGS

0 1 2 4 8 16 FT.

FRONT  
ELEVATION

DESIGNED  
C FRAZIER  
C KENKEL  
DRAWN  
C KENKEL  
TECH. REVIEW  
G HIGGINS  
DATE 12 / 87

SUB SHEET NO

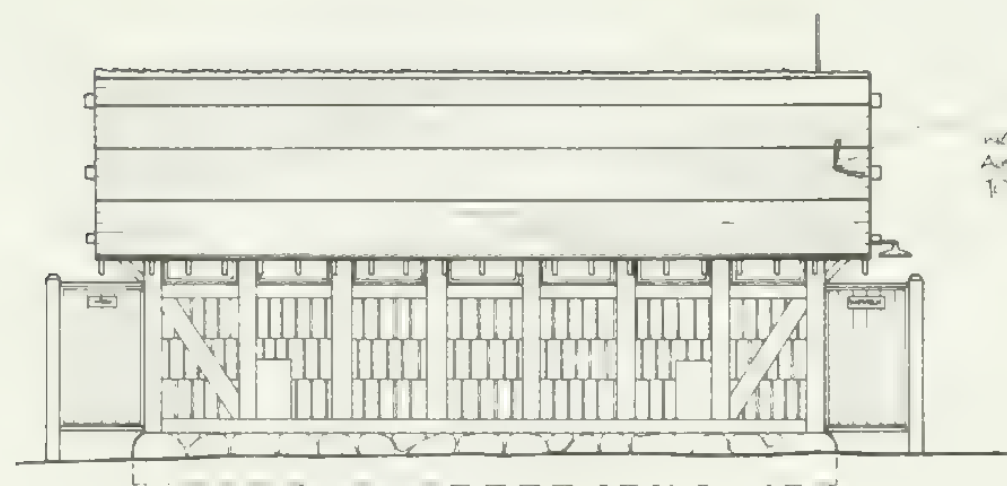
TITLE OF SHEET  
COMFORT STATION  
PLAN, ELEVATIONS, SECTIONS  
DEFICIENCIES

DRAWING NO  
102  
25,001

PKG. NO. 9  
SHEET 9  
OF 12

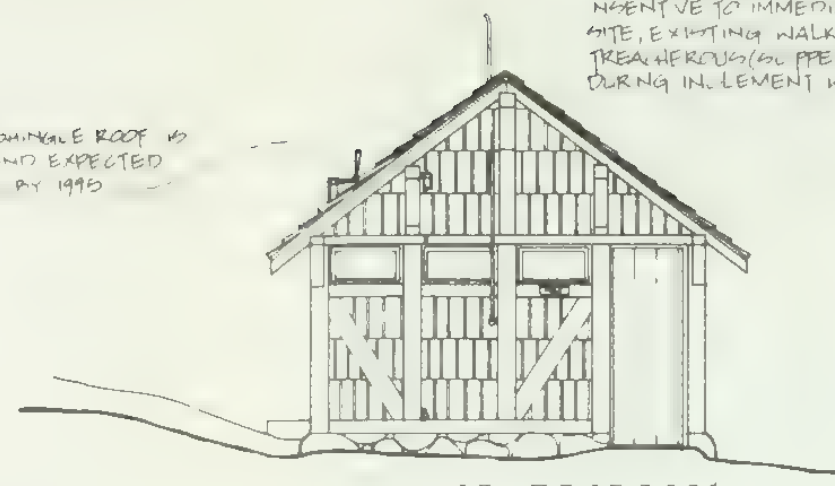
DATA: COMFORT STATION DESIGNED BY





WEST

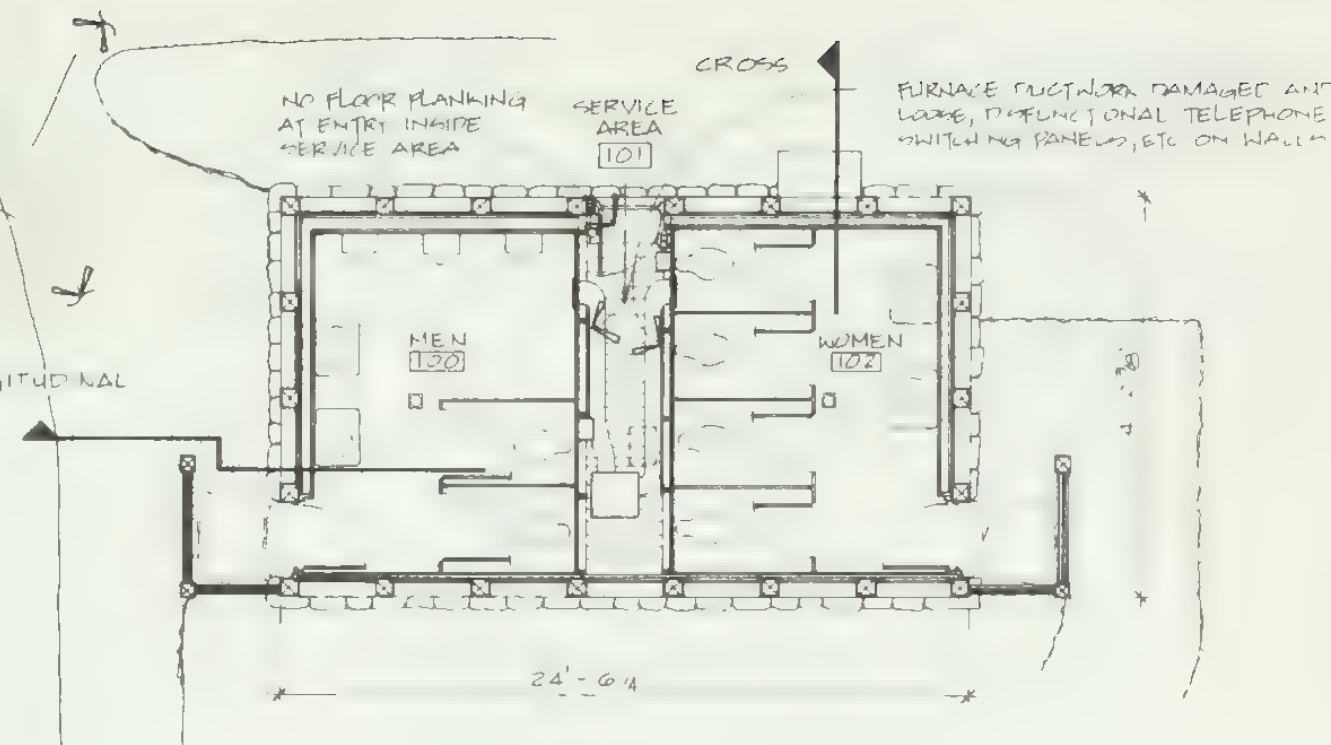
WOOD SHINGLE ROOF IS  
AGED AND EXPECTED  
TO FAIL BY 1995



NORTH

SERVICE ROAD IS  
NEARBY TO IMMEDIATE  
SITE, EXISTING WALK BECOMES  
DANGEROUS (SLIPPERY)  
DURING INCLEMENT WEATHER

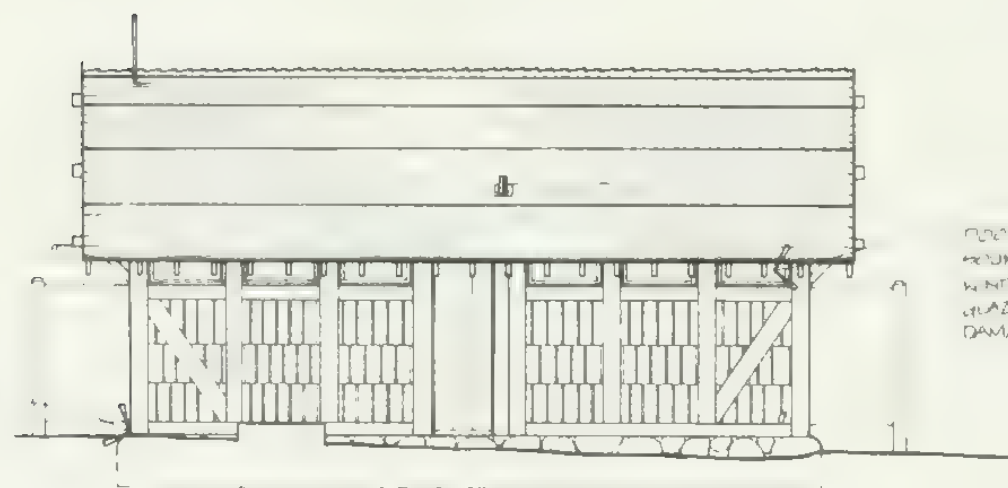
LONGITUDINAL



FLOOR PLAN

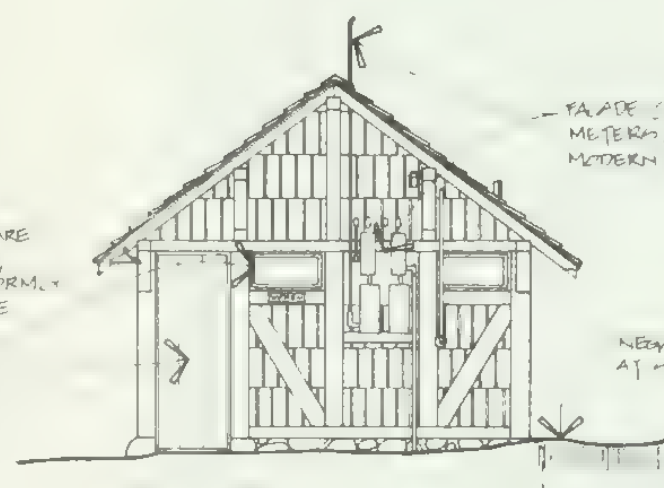
FURNACE FACTORY DAMAGED AND  
LOOSE, DYSFUNCTIONAL TELEPHONE  
SWITCHING PANELS, ETC ON WALL

THE BRACE IS  
NOT TIGHT  
WALL BEAM



EAST

FLOORS AND WINDOWS ARE  
SOURCES OF HEAT LOSS,  
WINDOWS ARE NOT UNIFORM,  
GLAZER AND GLASS ARE  
DAMAGED



SOUTH

FACADE CLUTTERED WITH ELECTRICAL  
METERS, HOSE-UPS, MASTHEAD, ETC.  
MODERN ACCRETIONS ARE INTRUSIVE

NEGATIVE SURFACE WATER DRAINAGE  
AT SOUTHEAST CORNER

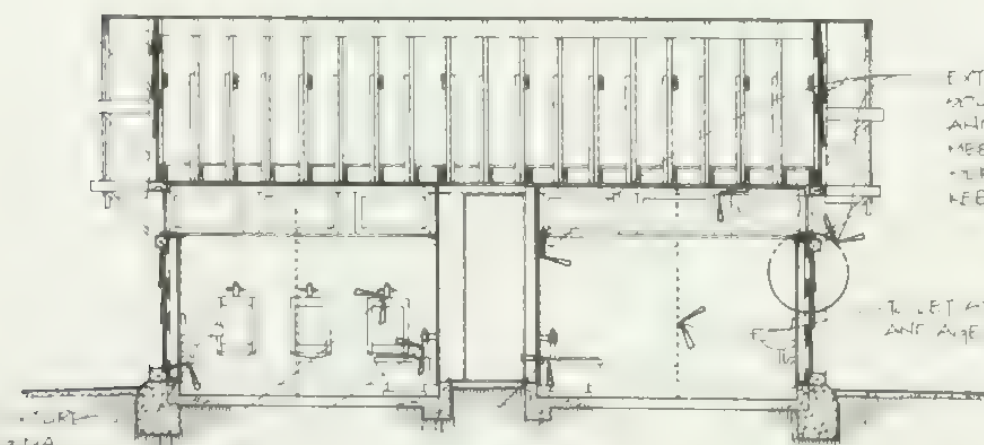
### NOTES

ELECTRICAL WIRING, OUTLETS AND FIXTURES  
ARE OLD BUT NOT ORIGINAL AND ARE INSUFFICIENT

ABSENCE OF FIRE DETECTION ALARM SYSTEM

NO HANDICAPPED ACCESSIBLE TOILET  
FACILITIES THAT MEET NPS POLICY  
REHABILITATION OF COMFORT STATION WOULD  
MEAN MAJOR SITE INTERVENTION FOR RAMP  
AND MODIFICATION OF FACADES AND ENTRIES  
SEE ACCESSIBILITY ALTERNATIVES SHEETS  
2 & 3 EXISTING EXTERIOR DOORS ARE 28'  
CLEAR 32" MIN. REQUIRED WIDTH FOR  
HANDICAPPED ACCESSIBILITY

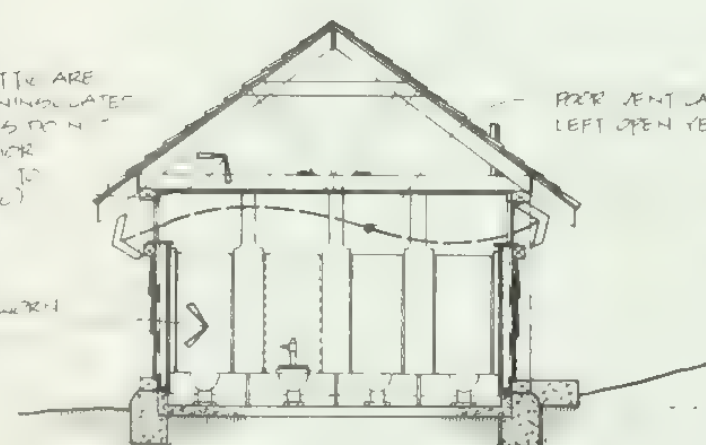
PLUMBING TYPES AND FIXTURES  
ARE NOT PLUMBING ORIGINAL  
THEY HAVE BEEN REPLACED BY  
BREAKAGE OF A PIPE IN  
UNINSULATED WALL



LONGITUDINAL

EXTERIOR WALLS AND ATTIC ARE  
SOURCES OF HEAT LOSS UNINSULATED  
AND WALLS AND CEILINGS DO NOT  
MEET FIRE CODES INTERIOR  
SURFACES ARE DIFFICULT TO  
KEEP CLEAN (TIMBER)

TOILET WALL PARTITIONS ARE WORN  
AND ARE NOT ORIGINAL



CROSS

POOR VENTILATION WINDOWS MUST BE  
LEFT OPEN YEAR ROUND

FINISH CEILING

FINISH FLOOR

SCALE  
1/4" = 1'-0"  
ALL DRAWINGS

0 2 4 8 16 FT

PLAN

DESIGNED  
FRAZIER  
KENNEL  
DRAWN  
C. KENNEL  
TECH. REVIEW  
G. HIGGINS  
DATE  
12/87

SUB SHEET NO.

TITLE OF SHEET  
**COMFORT STATION  
PLAN, ELEVATIONS, SECTIONS  
DEFICIENCIES**

DRAWING NO.  
102  
25,001  
PKG NO.  
SHEET  
9  
OF 12



\*ELECTRICAL OUTLETS  
IN GARAGE ARE NOT  
PROTECTED WITH GFCI's  
AS REQUIRED BY CODE

\*NO OTHER GARAGE  
DEFICIENCIES ARE  
IDENTIFIED



STORM SASH  
STORAGE CLOSET

\*UNDERGROUND  
FUEL TANK IS IN  
ENVIRONMENT  
BY CURRENT S

NORTH

ST

STO

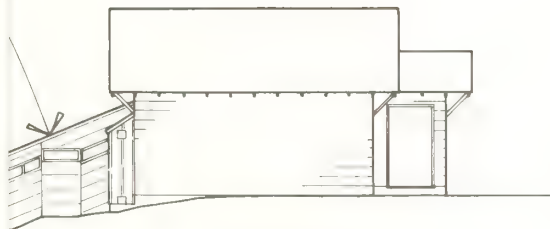
WOODEN FENCE



RESIDENCE

ST

G  
H  
F



GARAGE

ST

DESIGNED  
C FRAZIER  
C KENKEL  
DRAWN  
CAK  
S. MOORE  
TECH. REVIEW  
G HIGGINS  
DATE 12/87

SUB SHEET NO

TITLE OF SHEET

RANGER RESIDENCE/GARAGE  
SITE PLAN, ELEVATIONS  
DEFICIENCIES

DRAWING NO

102  
25,001

PKG NO. SHEET

200 10

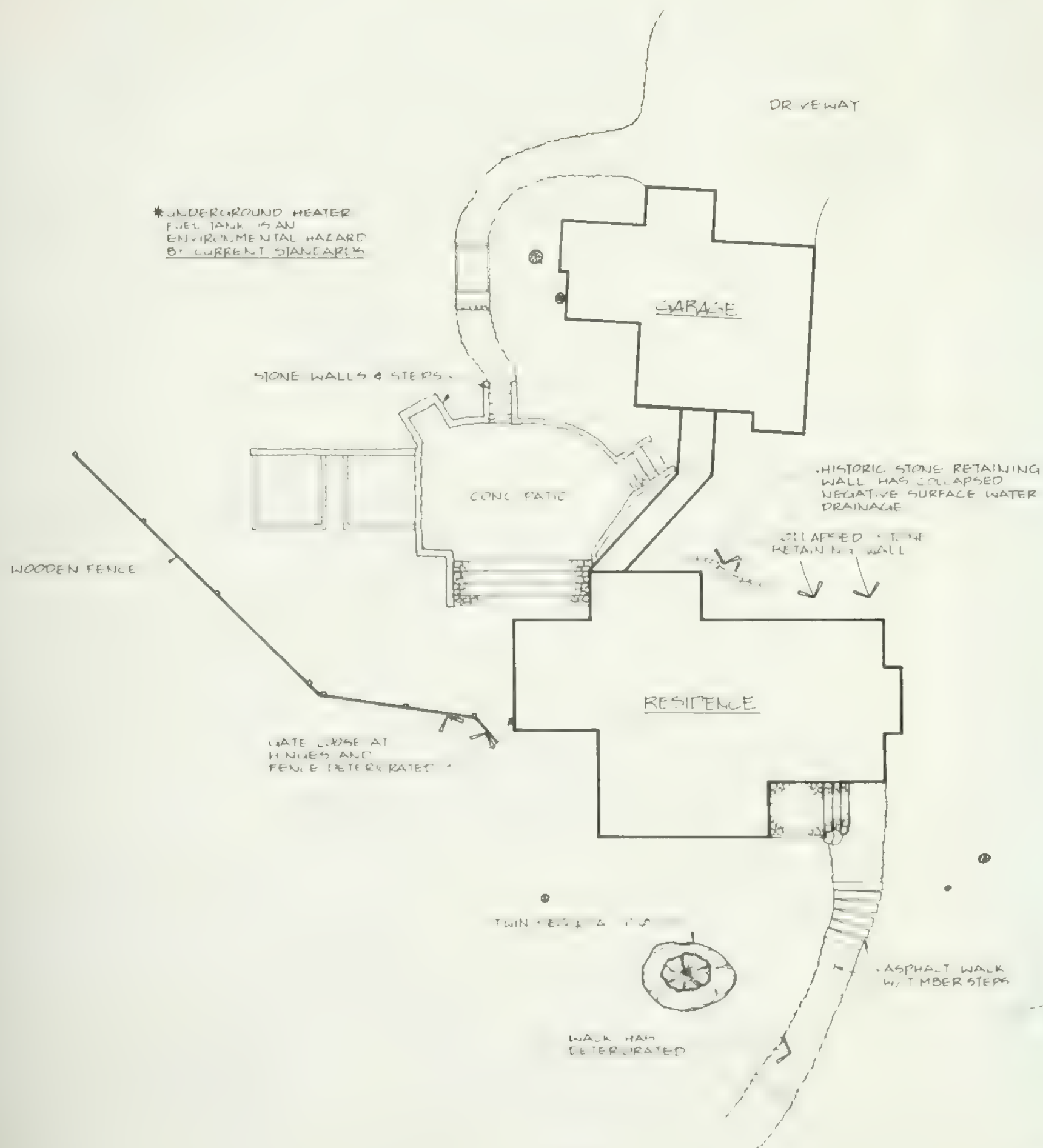
OF 12



\*ELECTRICAL OUTLETS  
IN GARAGE ARE NOT  
PROTECTED WITH GFCI  
AS REQUIRED BY CODE

\*NO OTHER GARAGE  
DEFICIENCIES ARE  
IDENTIFIED

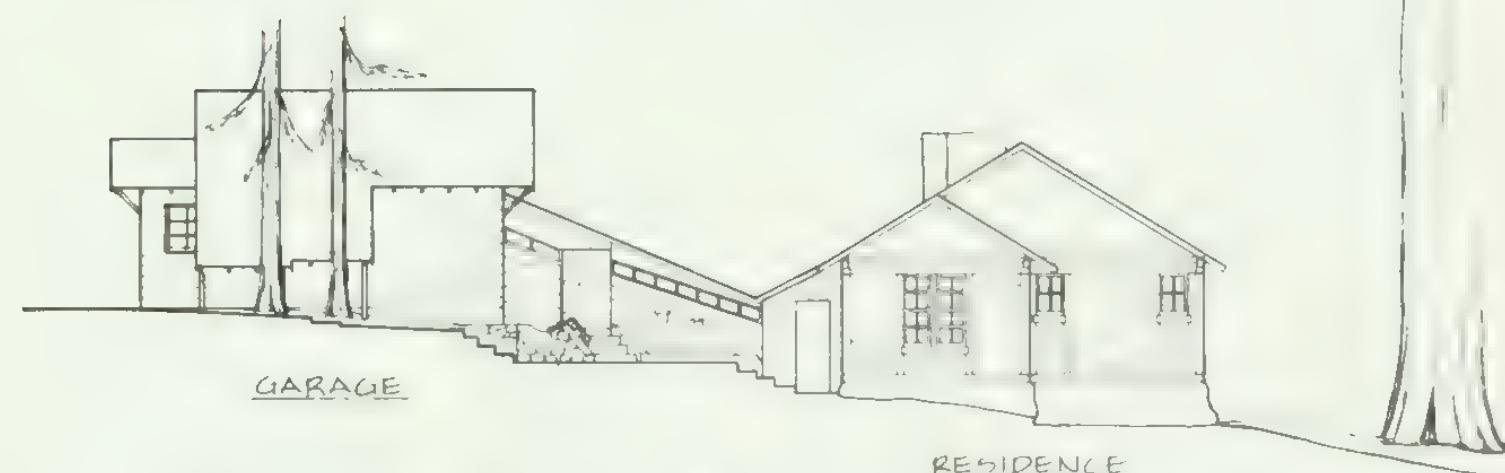
\*TORN GASH  
STORAGE CABINET



SOUTH

NORTH

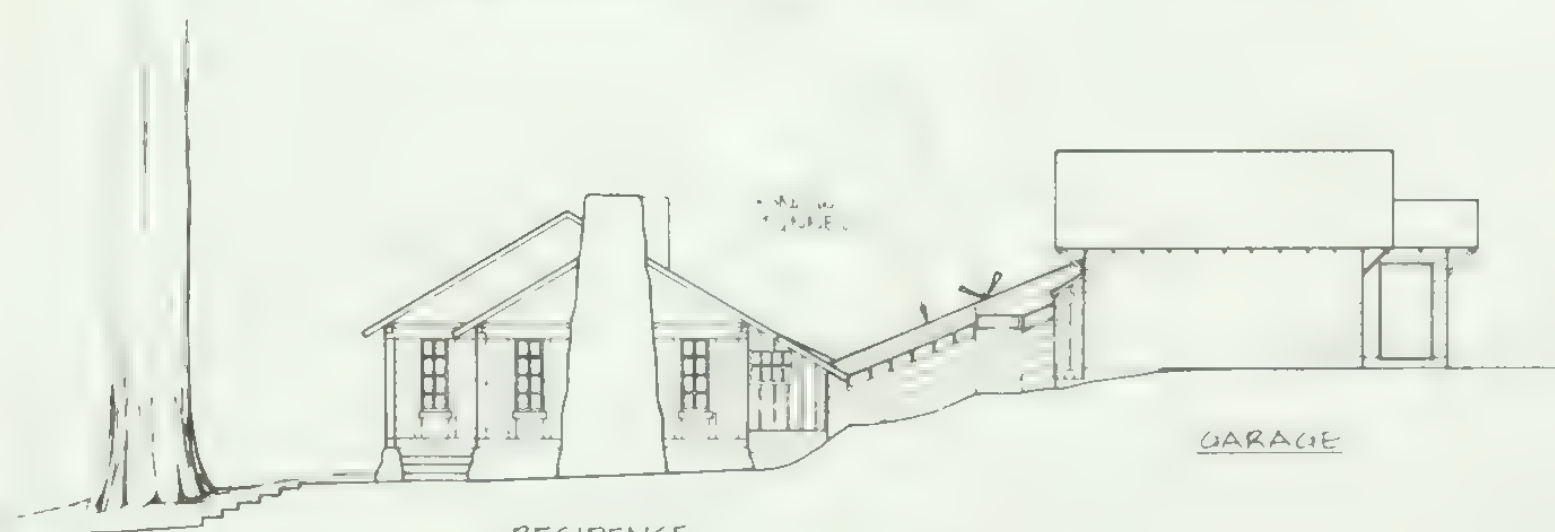
GARAGE



GARAGE

EAST

RESIDENCE



RESIDENCE

WEST

GARAGE

SITE

SCALE 1" = 4' 0"  
ALL DRAWINGS  
PLAN & TRUE

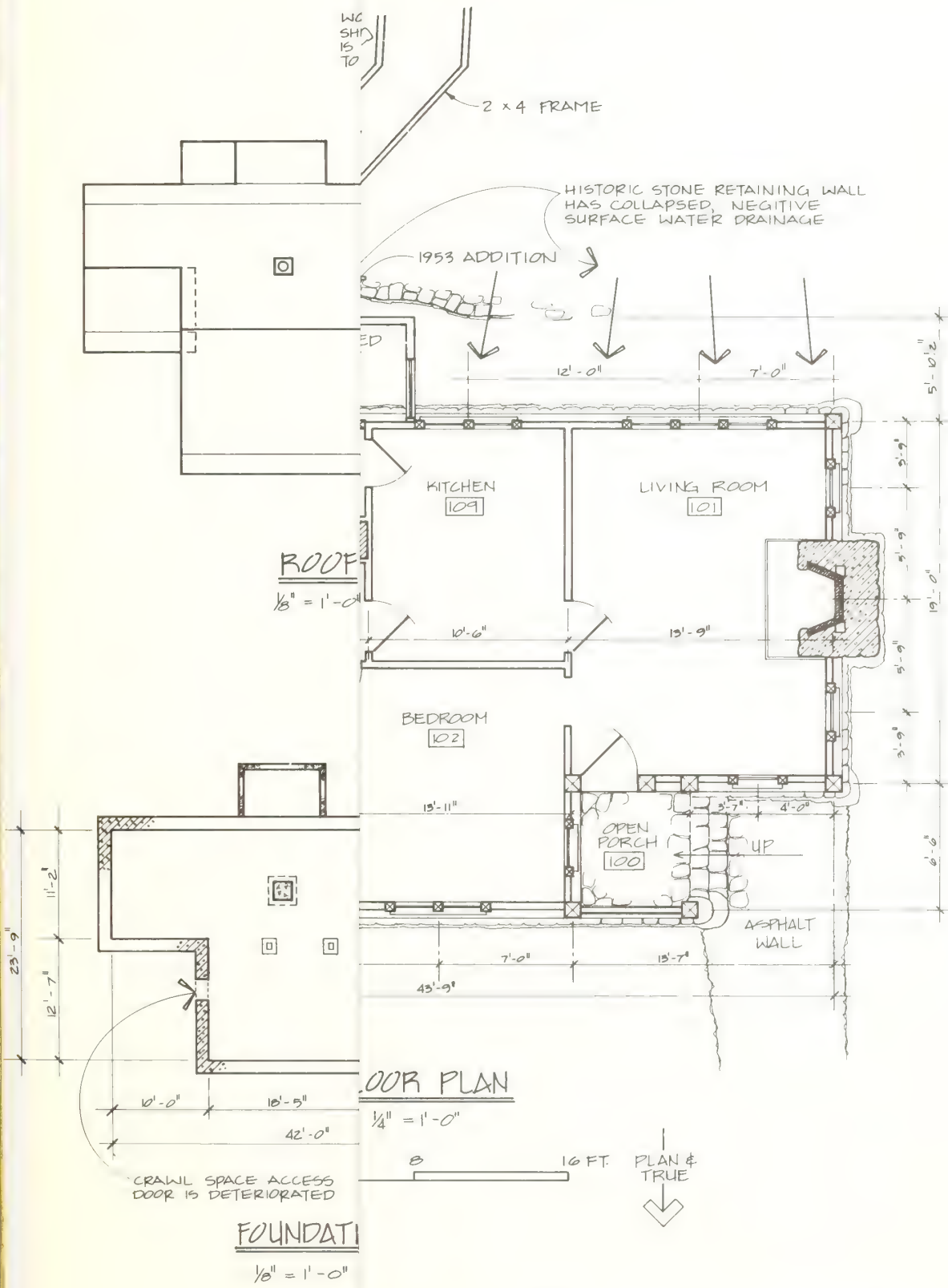
DESIGNED  
C. FRAZER  
C. KENNEL  
DRAWN  
M. CAR  
TECH. REVIEW  
G. HIGGINS  
DATE 12/87

SUB SHEET N

RANGER RESIDENCE/GARAGE  
SITE PLAN, ELEVATIONS  
DEFICIENCIES

DRAWN N  
102  
25,001  
PKG NO  
SHEET  
10  
OF 12





SCALE 1/8" = 1'-0"

DESIGNED  
C FRAZIER  
C KENKEL  
DRAWN -S/M  
C KENKEL  
TECH. REVIEW  
G. HIGGINS  
DATE 12/87

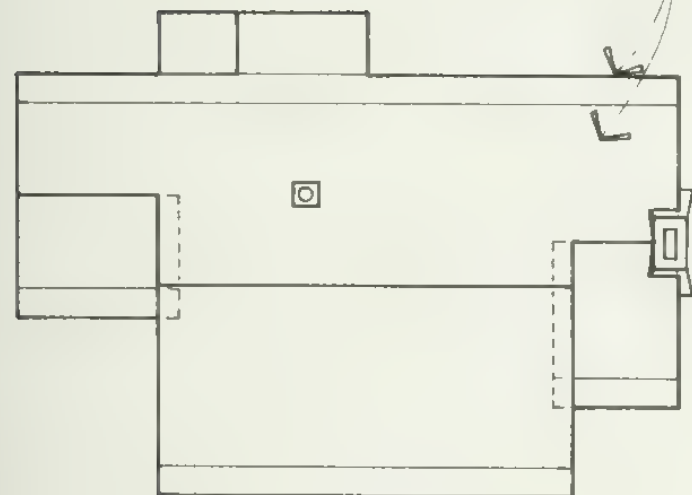
SUB SHEET NO

TITLE OF SHEET  
**RANGER RESIDENCE  
PLANS & DETAIL  
DEFICIENCIES**

DRAWING NO  
102  
25,001  
PKG NO.  
2001  
SHEET  
11  
OF 12



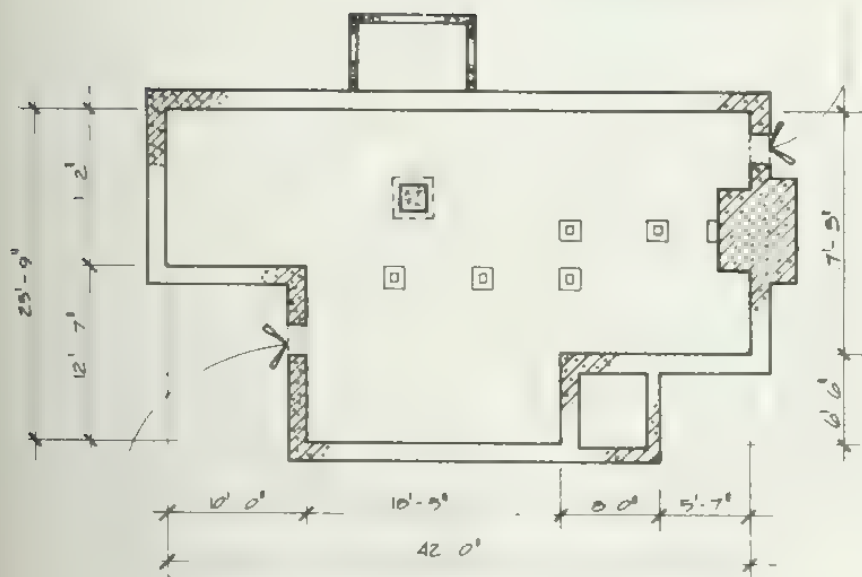
WOOD SHINGLE ROOF AND SHEET METAL SNOW FLASHING IS AGED AND EXPECTED TO FAIL BY 1991



**ROOF**

1/8" = 1'-0"

CRAWL SPACE VENT IS PARTIALLY BLOCKED AND VENT SCREEN IS DETERIORATED



CRAWL SPACE ACCESS DOOR IS DETERIORATED

**FOUNDATION**

1/8" = 1'-0"

SCALE 1/8" = 1'-0" 0 2 4 8 16 32 FT

**WALL PROFILE AT EAVE**

**WALL PROFILE AT GABLE**

**TYPICAL WALL PROFILE**

**WALL PROFILE**

1/4" = 1'-0"

BOARD & BATTEN

10 x 10 PUNCHED

LAP SIDING

MORTAR IS DETERIORATED

LOCAL GRANITE FOUNDATION

CONCRETE PATIO

NEGATIVE SURFACE WATER AND RAINWATER FROM DOWNSPOUT DRAINAGE

SNOW TUNNEL UP TO GARAGE

2 x 4 FRAME

HISTORIC STONE RETAINING WALL HAS COLLAPSED, NEGATIVE SURFACE WATER DRAINAGE

1953 ADDITION

ENCLOSED PORCH 110

BEDROOM 105

SERVICE ROOM 108

KITCHEN 109

LIVING ROOM 101

CL 107

HALL 106

BATH 104

BEDROOM 102

CLOSET 103

OPEN PORCH 100

UP

ASPHALT WALL

**FLOOR PLAN**

1/4" = 1'-0"

SCALE 1/4" = 1'-0"

0 1 2 4 8 16 32 FT

PLAN & TRUE

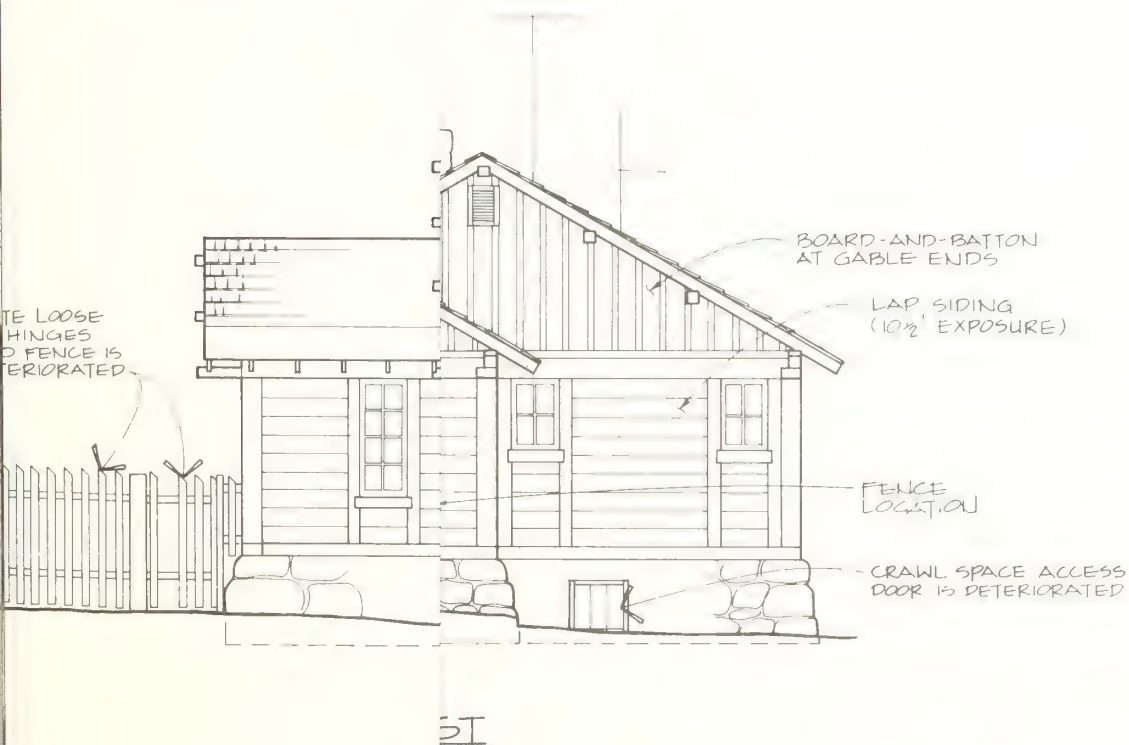
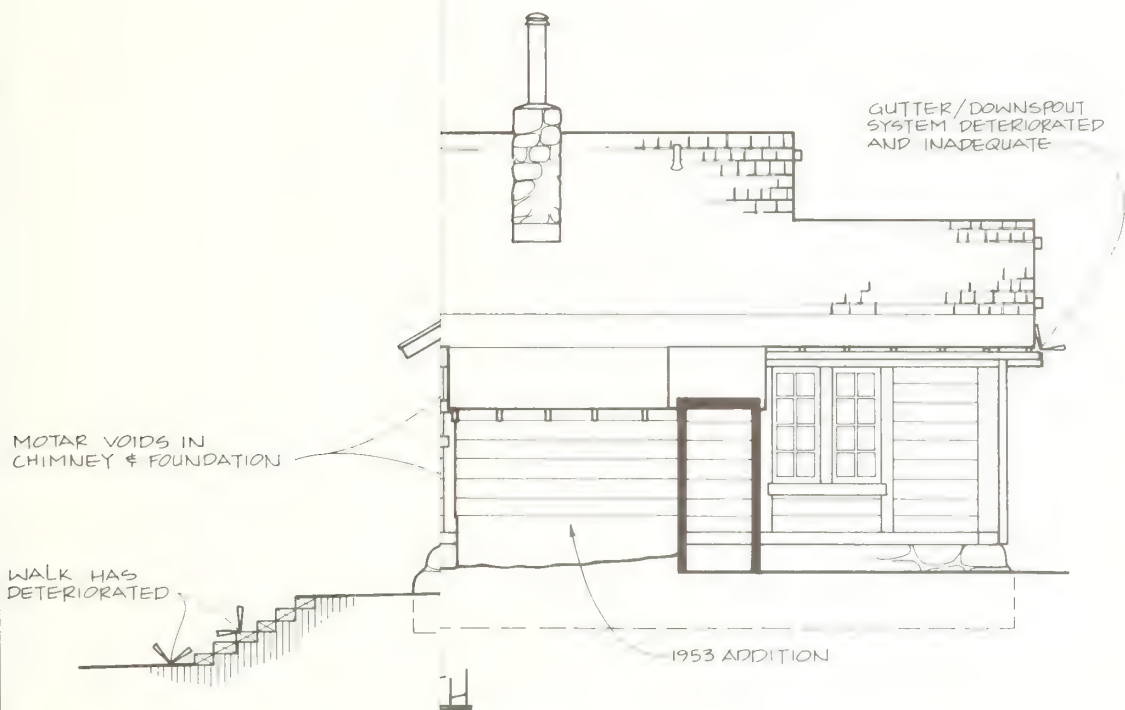
DESIGNED  
C FRAZIER  
C KENKEL  
DRAWN  
C KENKEL  
TECH REVIEW  
G HIGGINS  
DATE 12/87

SUB SHEET NO

TITLE OF SHEET  
**RANGER RESIDENCE  
PLANS & DETAIL  
DEFICIENCIES**

DRAWING NO  
102  
25,001  
PKG NO  
2007  
SHEET  
11  
OF 12





DESIGNED  
C FRAZIER  
C KENKEL  
DRAWN  
C KENKEL  
TECH. REVIEW  
G HIGGINS  
DATE 12/87

SUB SHEET NO.

TITLE OF SHEET

RANGER RESIDENCE  
ELEVATIONS  
DEFICIENCIES

DRAWING NO.

102  
25,001

PKG  
NO.

2001

SHEET

12

OF 12



WOOD SHINGLE ROOF AND SHEET METAL  
SNOW FLASHING IS AGED AND EXPECTED  
TO FAIL BY 1999

CRAWL SPACE VENT IS  
PARTIALLY BLOCKED AND  
VENT SCREEN IS DETERIORATED

GUTTER/DOWNSPOUT  
SYSTEM DETERIORATED  
AND INADEQUATE

MORTAR VOIDS IN  
CHIMNEY & FOUNDATION

WALK HAS  
DETERIORATED

6"x10" PUNCHEONS

10"x10" PUNCHEONS

HISTORIC STONE  
RETAINING WALL  
HAS COLLAPSED

WEST

NEGATIVE SURFACE  
WATER DRAINAGE

SOUTH

1953 ADDITION

INADEQUATE SPARK  
ARRESTOR AT CHIMNEY

SNOW TUNNEL & AN  
INTRUSION ON HISTORIC  
SCENE

EXTERIOR PAINT FINISH  
IS DETERIORATED

\*EXISTING CRAWL SPACE  
PLUMBING IS DETERIORATED  
AND SUBJECT TO FREEZING

\*ABSENCE OF FIRE  
DETECTION/ALARM  
DEVICES

GATE LOOSE  
AT HINGES  
AND FENCE IS  
DETERIORATED

BOARD AND BATTEN  
AT GABLE ENDS

LAP SIDING  
(5" EXPOSURE)

FEWER LOCATIONS

CRAWL SPACE ACCESS  
DOOR IS DETERIORATED

NORTH

EAST



DESIGNED C. FRAZIER C. KENKEL	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN C. KENKEL		<b>RANGER RESIDENCE ELEVATIONS DEFICIENCIES</b>	102
TECH. REVIEW G. HIGGINS			25,001
DATE 2/87			PKG NO. 12
			OF 12



## COMPLIANCE WITH REGULATIONS

To accomplish the cultural resource management mission of the National Park Service, compliance with several standards and regulations is required by NPS policy. "Cultural Resources Management" (NPS-28, release number 3, August 1985) expands and clarifies NPS policy and amplifies the legal hierarchy of laws, executive orders, and regulations with which this HSR and the subject preservation project must comply. Several areas of concern, specifically identified by NPS-28 and/or the Secretary of the Interior's "Standards and Guidelines for Archeology and Historic Preservation" (48 FR 44737-44740, September 29, 1983) are addressed below. These considerations are aspects of the design program for the treatment scope of work and are incorporated, in summary, in the "Recommendations" subsection and in the "Assessment of Effect" subsection, where mitigation is appropriate.

## PRESERVATION/REHABILITATION STANDARDS

The secretary's standards denote several requirements applicable to the treatment level proposed for this project. The relevant standards are quoted in part below, and a statement follows each quotation describing the method of compliance being followed.

Every reasonable effort shall be made to provide a compatible use . . . that requires minimal alteration . . . , or to use a property for its originally intended purpose.

In the case of the district ranger residence and comfort station, they will continue to be used in their historic manner. The use of the market will change upon implementation of the treatments recommended herein; however, the new use would be generally compatible and will require minimal alteration of significant aspects of the building. The "Implications of Proposed Use" subsection above is an evaluation of the proposed use of the market and the impact anticipated.



. . . distinguishing original qualities . . . shall not be destroyed.

The "Architectural Significance" and "Physical Description" sub-sections above delineate the significant features and distinguishing qualities of the subject structures. None of these features would be destroyed as a result of the recommended treatments. However, in the case of knotty-pine paneling at the market, it would be removed in part and reinstalled to facilitate rehabilitation.

All buildings . . . shall be recognized as products of their own time. Alterations which have no historical basis and which seek to create an earlier appearance shall be discouraged.

The buildings are recognized as products of their own time or as products of changes through time and no attempt is proposed to return them to earlier appearances, with the following exceptions: A temporary metal roof was placed over top of wooden shakes on the market in 1975 as an expedient means of establishing weather resistance and snow management. It is recommended to dispose of this intrusive metal roof and stabilize, preserve, or replace the shake roofing to properly reestablish weather resistance and duplicate the historic character. The original qualities of the market are identified as those additions and alterations made through 1938. The 1953-54 addition on the ranger residence is also recognized as a valid product of its day and would not be removed under the proposed program. Also, repainting specifications will be based on earliest paint layer colors.

. . .[physical] changes may have acquired significance in their own right, and this significance shall be recognized and respected.

Changes and additions have, indeed, become significant to the distinguishing character of the market and ranger residence. The



"Architectural Significance" and "Physical Description" sub-sections above describe these changes and their significance. The recommended treatments will preserve the significant aspects of this history and development in the buildings with no attempt being made to return to (or restore) an earlier period that would require removal of later "historical" additions.

Distinctive . . . features . . . shall be treated with sensitivity.

Recommendations are made to preserve all distinctive features and to initiate a program of ongoing preservation maintenance to assure their survival unimpaired (see "Recommendations" sub-section below).

Deteriorated architectural features shall be repaired rather than replaced, wherever possible. [Where] replacement is necessary, the new material should match the material being replaced in composition, design, color, texture, and other visual qualities.

Every effort has been made to recommend treatments of least impact and to stipulate appropriate duplication of historic material appearance where replacement is necessary. At the final design phase, indepth research will be conducted as necessary to specify all products and procedures to comply with this standard.

Stabilization shall reestablish . . . stability . . . through reinforcement . . . [and] by arresting material deterioration . . ., shall also reestablish weather resistant conditions. . . ."

and

Stabilization shall be accomplished in such manner that it detracts as little as possible . . . [and] so as not to intrude upon or detract from the aesthetic and historical quality. . . .



Stabilization treatments are recommended for the market structural systems and for the retaining wall behind the ranger residence. The recommended treatments (see "Recommendations" section below) comply with these stabilization standards in terms of method and minimization of impact.

Preservation shall maintain the existing form, integrity, and materials. . . . Substantial reconstruction or restoration . . . are not included in a preservation undertaking.

and

Preservation shall include . . . a program of ongoing maintenance.

Stabilization of these cultural resources is a basic part of the treatment scope as is the ongoing preservation and maintenance of all distinguishing features. The recommendations were selected to comply with these standards and focus on stabilizing and preserving existing form, integrity and materials rather than restoring earlier periods with the exceptions cited above (market roof and painting scheme).

Contemporary design for alterations and additions . . . shall not be discouraged when . . . [they] do not destroy significant historic, architectural, or cultural material and such design is compatible. . . .

and

Wherever possible, new additions or alterations to structures shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired.

The primary purpose of the recommended treatments is to rehabilitate the subject buildings as necessary and in compliance with these standards to either perpetuate existing usage or to accommodate adaptive usage (in the case of the market). The introduction of a new door at the market would



be located at one of the least significant elevations, be of compatible design and would be minimally destructive. Otherwise, treatments will result in no destruction of the buildings' significant exteriors.

### PROTECTION SYSTEMS (LIFE-SAFETY)

The proposed use of a historic structure helps establish the necessity of protection systems while the cost-effectiveness of such systems and the physical impact of these systems are also considerations. The appropriateness of several protection systems is analyzed and recommendations regarding each are given below.

#### Egress

Egress requirements in the comfort station and ranger residence are currently met and because no use change is intended by this project, additional egress considerations are not required under current code. However, the use of the market will change and occupancy may be expected to exceed 50 people in the NPS-half, i.e., designating it a place of assembly. The rehabilitation design, therefore, must incorporate a minimum of two means of egress. To accomplish this, existing worn-out doors will be restored to operate and panic hardware will be installed as necessary.

#### Fire-rated Materials

The 1983 rehabilitation of the ranger residence appears to have successfully incorporated appropriate fire rated materials--no additional action is necessary. The comfort station and market fall short of the standards under type III construction requirements (heavy timber plus 1-hour fire-resistive material requirements). This means an upgrade of materials is necessary at both buildings as their existing wall systems are



less than 30-minute rated. New nonloadbearing interior partitions should also be 1-hour rated and exterior walls should be upgraded by installing gypsum board. This would be accomplished to include insect treatment, fabric repair and installation of wall insulation and moisture barriers.

### Fire Detection System

"[a] fire detection [system] . . . shall be used in all Service historic structures . . . when they can be justified cost-effective, and not destructive to the physical or historic integrity of the structure." (NPS-28, 5.33, 8/85). Because of the isolated location of the historic village structures, especially after most of the development is removed--that is, distance to Lodgepole, Clover Creek, and Ash Mountain facilities--a telephone line or radio signal annunciating system for the earliest possible warning of fire appears appropriate. As part of the market and comfort station rehabilitation, the installation of a centrally monitored fire detection system would be both cost effective and could be installed with a minimum impact on historic integrity. The fire detection system should be designed and installed according to the Life Safety Code, NFPA 101 and should also serve the ranger residence/garage where overnight occupancy is planned (see design criteria in Recommendation sub-section).

### Fire Suppression System

Consideration of a fire suppression system for the market and comfort station (as part of their rehabilitation) is required under NPS-28 as stated above: if not destructive and if cost-effective or if necessary for the protection of the cultural resources. As an integral part of the rehabilitation of the market and comfort station, a dry or wet pipe system could be installed in a nondestructive and reasonably nonintrusive manner. However, the the life safety hazard potential is low and cost may be unwarranted. The immediate building site currently includes



several fire fighting hose bibbs/hydrants. If these continue in operation after development is removed from the Giant Forest area, they would provide an adequate second-line of fire fighting capability. A first-line, occupant response fire suppression strategy should be anticipated, by installing and maintaining an adequate array of handheld extinguishers at all three buildings (see "Recommendation" subsection.) The fire-rated material upgrade proposed for the market and comfort station would provide an extended fire-response time and increased base-line of building protection.

The cost of a complete dry or wet-pipe fire suppression system would include not only the system within the building(s) but may also include the cost of building a properly sized reservoir and pressurization (fire pumping) facility. Such facilities could cost \$200,000 to \$500,000 depending on water supply and pressure adequacy--a price tag that does not appear to be cost effective at this time. The life-safety hazard potential is low because of the proposed ease and availability of egress at the market. Only the ranger residence will include overnight occupancy. For these reasons, an automatic fire suppression system is not recommended at this time.

### Intrusion Detection System

The village area, market and comfort station are proposed for day-use only. The nearby ranger residence will be occupied by the area security officer. During the day, NPS personnel would be present onsite. After hours, the district ranger would, through surveillance, provide security. None of the buildings will house original irreplaceable artifacts or valuable objects susceptible to burglary. There appears to be no justification for installation of a security detection system as part of this project. If the concession operator in the market proposes otherwise, the design and installation of that system shall be certified by regional cultural resource specialists using the form XXX, assessment of effect.



## CONCESSION MANAGEMENT

NPS-28 (3.26-27, 8/85) provides several "specific precautions" required under management of concessions in historic structures that should be utilized in all concessioner agreements for the market. Pertinent precautions are as follows:

interior finishes, elements, and fixtures must be evaluated for their significance and, if significant, preserved [see "Significance" and "Description" sub-sections]

maintenance agreements covering special needs of the historic structure should be incorporated into the contractual agreement arranged between the Park Service and the concessioner [see "Assessment of Effect" sub-section]

effective fire detection/suppression and security systems required for public and structural safety shall be designed to be as unobtrusive as possible and located to result in minimum impact or alteration upon the structure while meeting applicable codes [see paragraph above]

handicapped accessibility shall be designed to be as unobtrusive as possible and located to result in minimum impact or alteration upon the structure while meeting applicable regulations [see paragraph below]

All proposals for concessioner projects, whether initiated by the concessioner or the National Park Service, are to be submitted to regional cultural resource specialists and concessions management specialists for review. The regional cultural resources specialists will use the assessment of effect format (XXX Form) as described in NPS-28, chapter 4 for review of these proposals. Design Guidelines, a subsection in the "Recommendations" sub-section provides additional recommendations and constraints on concessioner initiated design modifications.



## HANDICAPPED ACCESSIBILITY

NPS-28 states "in the case of historic structures and sites, accessibility generally means direct access to all aspects of programs and services" (NPS-28, 3.29, 8/85). Programs and services are to be provided in the market and comfort station. The proposed regrading and rehabilitation of the market grounds and interior changes will be designed to fully accommodate disabled visitors and employees. Means of access and egress will be designed to comply with uniform Federal Accessibility Standards. Because of the extensive impact of site and building modifications to make the comfort station accessible, it is proposed to build a new toilet facility in the market making it the central, multi-functional and entirely accessible NPS structure. Because the comfort station cannot be adapted without an extensive adverse impact on the values for which it is listed on the National Register, it will continue to serve the non-disabled as it has done for over 50 years. Modifications to improve accessibility at the ranger residence are not recommended and none are necessary under current policy.

## ENERGY CONSERVATION

"Law and regulation require that Federal agencies reduce energy use" (NPS-28, 3.27, 8/85). Under this directive it is entirely appropriate to install energy conserving measures wherever reasonable as part of the rehabilitation of the market and comfort station. Because the wall and ceiling systems in these buildings are below standards for fire-rating (see above), wall and ceiling surfaces would have to be removed, upgraded, and reinstalled. Insulation and caulking are easily accommodated during such a treatment and are recommended. Likewise, windows and doors in both buildings will require some rehabilitation and repair work and this can be the vehicle to accommodate designs to double glaze or install storm sash where practicable, caulk, and weatherstrip. The ranger residence is currently fitted with storm sash and appears to be adequately insulated. The market and comfort station are currently heated and



proposed use will require heating. Measures to reduce the energy needs for heating are consistent with NPS policy and should be designed with a minimum of intrusiveness and wherever they will be cost-effective in the long run.



## RECOMMENDATIONS

An essential purpose of a historic structure report is to recommend treatments for the subject buildings in a manner consistent with their significance, integrity, condition, and intended use, while complying with NPS policy and management goals. Their significance and their integrity is discussed in the "Physical Description" subsection, their intended use in the "Implications of Proposed Use" subsection, and their condition in the "Analysis of Existing Conditions" subsection. The "Compliance with Regulations" subsection details treatment requirements necessary to accomplish the project objectives and to comply with specific NPS policies. What follows is a treatment strategy, summary of recommended treatments and discussion of design program features resulting from the foregoing analysis subsections. The "Cost Estimate" subsection below provides construction cost estimates for the recommended work which is presently programmed for FY 94. The Proposed Treatment Drawings (following the "Recommendations" narrative) includes a graphic illustration of the preliminary treatment design.

### TREATMENT STRATEGY

#### Level of Treatment

The broadest appropriate level of treatment for the three historic structures is rehabilitation, defined in NPS-28 as follows:

The act or process of returning a structure to a state of utility [or continuing the utility of a structure] through repair or alteration that makes possible an efficient contemporary [or historic] use while preserving those portions or features of the structure which are significant to its historical, architectural, and cultural values (p.A.10).



Under the rehabilitation approach, both preservation and stabilization measures are appropriate as well as on-going preservation maintenance. The collective treatment approach, therefore, will facilitate the "utility" of the buildings within the parameters of contemporary codes (rehabilitation) while "sustaining the existing form, integrity and material" (preservation), including treatments necessary to "reestablish the structural stability" and "weather-resistant condition" (stabilization) as well as the on-going preservation maintenance as appropriate for these cultural resources.

### Treatment Phasing

According to policy, life-safety and basic maintenance must be initiated as soon as possible to facilitate the utility of the buildings. Emergency preservation treatments are identified below. Later, when construction funding becomes available, the appropriate rehabilitation (including stabilization and comprehensive preservation) treatments should be undertaken. Lastly, upon completion of the ultimate level of treatment, the buildings should be served by a historic structure preservation guide (HSPG) designed to direct preservation maintenance personnel in the conduct of on-going orderly, timely, and proper inspection and maintenance.

The treatment scope and its phasing, too, will be affected by larger scale project funding and phasing. The rehabilitation of the three historic structures covered in this HSR is one part of a much larger Giant Forest redevelopment project currently scheduled for implementation between FY 84 and FY 95. The overall project will include new facilities at Clover Creek, and, at Giant Forest Village, building and pavement removal, trail reconstruction, picnic areas, utility system rehabilitation, and new wastewater disposal facilities. The rehabilitation of the market, comfort station, and ranger residence scheduled for implementation in FY 94, will need to be closely coordinated with this larger scope program.



Interrelated construction scope elements for the comprehensive project will be the subject of a separate Giant Forest study now scheduled for FY 89. The HSR treatment scope is left open ended regarding work elements that will be addressed by the Giant Forest Area Study. Treatment phasing in terms of the historic structures is thus a function of the phasing of the overall project design phasing. While some treatments recommended here are presented in very sketchy terms, in the final phase of the preliminary design--after the Area Study--all treatments will be more clearly articulated in a formal preliminary design phase.

The authors recognize that it may not be appropriate to wait until FY 94 (six years from date of writing) to implement some of the proposed treatments. For example, roof failure and leakage is anticipated by FY 91 at the ranger residence and has already begun at the market, and wooden fabric deterioration due to insect infestation and negative site grades should be arrested as soon as possible. In addition, life-safety hazards should be corrected using reversible (temporary) measures immediately. A scope of emergency treatments will be confirmed in FY 88 for action prior to FY 94 and could include the following.

Market--metal roof repair/stop leaks or reroofing as proposed; site grading to eliminate negative drainage and damage due to earth and asphalt in contact with wooden members; wood boring insect treatment; opening up of a second door in the lounge for emergency egress; installation of temporary fire detection/alarm devices.

Comfort station--site grading to eliminate negative drainage and earth in contact with the wooden sill; installation of cover plates or GFCI's at A/C outlets.

Ranger residence--roof repairs or reroofing as proposed; site grading to eliminate negative drainage; installation of cover plates or GFCI's at bathroom, kitchen and garage A/C outlets.



It is quite possible that the scope of treatments listed below would be reduced by FY 94 because some of the proposed work as cited above could be accomplished in the interim. And, interim deficiency abatement measures may result in a variation of the final treatment program, e.g., removal of the temporary "fix" and installation of the permanent.

## DESIGN PROGRAM/SCOPE OF TREATMENTS

### Treatment Summary

From the "Condition Analysis" subsection and its tables and other requirements described in previous subsections, it is possible to enumerate a design program and scope of construction work. The scope of recommended treatments falls into four broad areas: site work, fabric preservation/stabilization, rehabilitation, and ongoing protection/preservation. These treatment activities and their location by building are summarized in table 4. This design program is incomplete at this time regarding some recommended treatments because of the limited scope of this HSR. Therefore, in addition to the four main recommended treatments, compatibility guidelines are outlined and a scope of work is proposed for resolution by the upcoming Area Study which will address the larger scale issues of the entire developed area.

### Site Work

Area topography is steep enough at each of the three structures to create problems of surface water run-off. This is compounded in winter with snow piling up against the structures. Grading and site work is recommended to correct negative surface runoff at each building and in part, should be done prior to FY 94. At the market site work would involve excavation behind (east of) the building to create a drainage path and include installation of a low retaining wall. The retaining wall could be built of stone. The grading would be continued south and west of the



Table 4: Treatment Summary

	M	CS	RR/G
Site work			
- grading, retaining walls, improve drainage*	X	X	X
Fabric preservation/stabilization			
- paint renewal	X	X	X
- carpentry and miscellaneous repairs	X	X	X
- re-roof*	X	X	X
- miscellaneous thermal and moisture protection	X	X	X
- stone masonry repointing	X		X
- floor, wall & crawl space moisture control*	X		
- roof structure reinforcement	X		
Rehabilitation			
- retrofit fire detection/warning system*	X	X	X
- mechanical systems	X	X	X
- exterior walls	X	X	
- windows	X	X	
- electrical systems*	X	X	X
- remove/relocate exterior utility accretions	X	X	
- resurface concrete floor of 1938 addition	X		
- improve accessibility	X		
- modify wall partition layout	X		
- new finishes/exhibitry-furnishings/equipment	X		
- subterranean (re-) placement of utility services	X	X	X
- landscape rehabilitation, walks, parking, etc.	X	X	
Ongoing protection/preservation			
- HSPG	X	X	X

---

M = market,

CS = comfort station

RR/G = ranger residence/garage

\* = at least in part, should be addressed prior to FY 94

market and include subsurface drain piping to carry water away from the building down to the parking area. The work would involve exposing crawl space vents and should be coordinated with new walkways recommended below. A new catch basin would be installed to collect the intermittent spring water and include rehabilitation of the existing below-building drain pipe.



At the comfort station, minor earth removal is recommended to reduce the site grade southeast of the building so that soil is not in contact with the sill beam and so that surface runoff flows away from the building. In addition, it is recommended to resurface the walkway to the comfort station providing a more slip resistant texture. The resurfacing would include narrowing of the walk and the project should consider replacing the existing hand railing to improve safety and historical compatibility.

Several actions are recommended at the ranger residence to improve site conditions. (1) Surface grading at the southeast corner where the downspout discharges. A subsurface drain pipe for about 15 feet may be necessary in conjunction with installation of a swale. (2) The stone retaining wall at the south would be rebuilt and the ground surface recontoured to create a drainage pattern to remove water from adjacent to the residence and from above the stone wall. (3) Minor grading at the southeast corner would uncover the partially blocked crawl space vent window at that location. (4) Soil would be removed from the walkway north of the residence and several of its timber steps would be replaced in-kind due to their rotted condition. (5) The wooden fence and gate should be maintained by performing minor repairs and resecurig hardware.

#### Fabric Preservation/Stabilization Work

Seven types of treatment activity are recommended to stabilize and preserve architectural fabrics at one, two or all three of the historic buildings:

- paint renewal
- miscellaneous repairs
- thermal and moisture system protection
- reroofing
- masonry repointing
- extensive floor, wall and crawl space repair at the market
- reinforcement of the market roof.



The following is a description of this work by building.

Paint Renewal - Market, Comfort Station, and Ranger Residence. The roofing of all three buildings should be painted dark green. Exterior walls should be painted brown. Exterior window trim on each building should be painted green or brown as determined by results of paint color study (see Appendix G). As part of the proposed rehabilitation work on the market and comfort station, interior repainting will also be necessary--colors should be selected to either match existing (generally off-white) or be of compatible hue (see Compatability Guidelines below).

Carpentry and Miscellaneous Repairs - Market, Comfort Station and Ranger Residence. A battery of fabric repairs are recommended at each building which fall outside of the other major categories of treatment and are listed here. Market--clean fireplace and chimney, install a flue lining with damper and a rain guard and spark arrestor of compatible design; fill a hole at the soffit on the east eave to eliminate pest access to the attic; repair broken windows on the north and east; repair doors on the west; clean and oil wooden floors and repair rafter tails (see Reroof below). Comfort station--install flooring planks to establish a walking surface in the mechanical chase (room 101), and repair and refinish entry doors. Ranger residence--clear out chimney and install rain guard and spark arrestor, repair crawl space vent window on the west and crawl space access door on the east, repair and stabilize wooden fence and gate east of the residence, and reestablish eroded walkway and timber steps to the north.

Reroof - Market, Comfort Station, and Ranger Residence. Reroofing all three buildings is recommended. The market and ranger residence may require temporary repairs or complete reroofing prior to FY 94. Existing roofing and flashing should be replaced similar to existing, areas of deteriorated sheathing would be replaced, and associated repairs or replacement of gutters and downspout (at the market and ranger residence) conducted. Broken and rotted rafter tails would be patched (using epoxy for example) or replaced as part of the reroofing effort. New roofs, including all new flashings, should be installed using material



and shingle coursing as originally built (see Appendix G for roof material and installation recommendations).

Although not historic, several roof related design modifications are recommended to improve water and snow management functions and for reasons of visitor safety and more efficient maintenance. The use of eave flashing--which is a traditional feature of the ranger residence roof, is recommended for the west facing roof surface of the market. This feature, although a non-historic intrusion, is justified in order to prevent ice damming. A system of gutters is also recommended at entrances of both the market and ranger residence although these features, presently extant at both buildings, are probably not original. Also, it is proposed to eliminate visitor traffic directly under west sloping roof eaves by pulling the sidewalk away from the market and installing a gravel splash area, graded with a swale to facilitate drainage. This feature would provide a dumping site for snow sluffing off of the roof (see Market and Comfort Station Site Plan Treatments, sheet 2).

Thermal and Moisture System Protection--Market, Comfort Station and Ranger Residence. At specific locations at each building, architectural system performance could be improved and materials better protected without damage to historical integrity by installing sealants, caulk, insulation and weatherstripping. This is a general recommended treatment which would reduce moisture infiltration through walls, windows and doors, and reduce drafts, and potentially damaging temperature fluctuations and insect access. The piping in the ranger residence crawl space should be insulated as well as the ceilings in the market and comfort station. See also additional thermal protection measures discussed under the rehabilitation treatments below.

Masonry Repointing--Market and Ranger Residence. For purposes consistent with the NPS-Rustic style, stone masonry joints were struck with a one-inch deep rake. Because of mortar deterioration and the presence of voids, repointing is recommended on the chimneys of the market and ranger residence and in the ranger residence foundation walls.



Floor, Wall and Crawl Space Repair - Market. An extensive fabric preservation effort is recommended at the south end of the market. In this treatment wood boring insect infestation would be terminated. Holes in the timber frame from rot, damage and insects would be filled prior to paint renewal. Rotten sill beams, wall frame, wall boards and paneling, flooring, subflooring, floor joists and floor beams and their wooden shims would be replaced with duplicate new material. Pressure treated material should be used below the floor where the features are not visually exposed.

Measures would be taken to reestablish the proper ventilation function of the crawl space to reduce the excessive moisture which is the root cause of all these material deficiencies. As noted under site work, above, ventilation windows would be uncovered, their frames and pest control screens renewed. Some areas of the crawl space (at the south end) would be excavated to increase its depth. A vapor barrier would be placed on the earth floor of the crawl space. If necessary, to assure air change and ventilation, a slow speed, efficient electric exhaust fan would be installed at the north end of the market crawl space.

Reinforce Roof Structure - Market. Reinforcement of the market roof, for structural reasons, is recommended at both the shed addition, dormer, and main building gable in order to eliminate the need for snow removal, unless it exceeds 10 feet in depth. This would involve installation of new rafters between existing members and addition of "truss" bracing at rafters not currently braced and placement of a new mid-span support beam under the shed rafters. The new wooden support beam would be supported by several new wooden columns, each of which will require a small concrete footing. The additional "truss" bracing will be similar to that already existing at alternate rafters. All attic rafter trusses would receive plywood gusset plates at each chord connection, plywood "diaphragm" bracing of attic floor joists and metal clips for seismic reinforcement at roof-wall connections (see Structural Engineering Report, Appendix B).



## Rehabilitation Work

Architectural rehabilitation of the market and comfort station will be necessary to enable their continued utility while meeting contemporary standards and functional needs. Also, some treatments of a rehabilitative nature are recommended for the continued operation of the ranger residence. Outlined below are nine types of rehabilitation treatments:

- retrofit fire detection/warning system
- rehabilitate mechanical systems
- rehabilitate exterior walls
- rehabilitate windows
- rehabilitate electrical systems
- remove/relocate exterior utility accretions
- resurface concrete floor of 1938 addition (market)
- improve accessibility (market)
- modify wall partition layout (market)

Retrofit Fire Detection/Warning System - Market, Comfort Station and Ranger Residence/Garage. It is appropriate to install temporary measures to detect fire and to warn building occupants prior to the system recommended for installation in FY 94. The following design characteristics are recommended for the proposed fire detection/warning system which should be designed by an appropriate engineering specialist in consultation with a preservation specialist:

the system when activated should automatically deactivate the building ventilation systems;

the system should signal locally with siren or horn to alert occupants to the need to evacuate and activate the first line of manual suppression--by park and concessioner staff;

the system should, in addition, signal the remote park firefighting staff by telephone line and/or radio transmission;



the system should be zoned to identify each structure and detectors should be located at all floor levels (including attics and crawl spaces) and in all spaces;

all components in the system should be listed by a nationally recognized testing laboratory to assure operational reliability;

the detectors and wiring could be surface mounted to avoid fabric damage--the visual intrusion being justifiable--however, maximum use of attics and crawl spaces for wiring is recommended;

the system's alarm processing center (master panel) should include triggers for each type of alarm (fire or intrusion) by zone and should activate automatic telephone relay and radio signal communications;

a combination of fire detection devices is recommended to maximize sensitivity and assure the quickest response possible;

the system may require a back-up electric generator to provide power in the event of electrical failure and to serve emergency lighting needs; and

emergency lighting in the visitor contact area and appropriate, but discreet, exterior illuminated exit signs should be installed at all means of egress in the market.

An automatic fire suppression system is not recommended because it is not justified on the basis of cost-effectiveness; the system would require development of a water supply, storage and pumping ability--with a back-up pump to meet code--as well as the sprinkler system itself, estimated at about \$500,000. Instead, a manual suppression strategy is recommended. This approach would employ: a) the fire detection system noted above; b) the onsite staff as the first line of defense using hand held fire extinguishers located throughout the buildings; and c) the



existing fire hydrants adjacent to the buildings in conjunction with the park fire-fighting staff with its pumper trucks as the second line of manual suppression. To facilitate the staff pumper equipment, hose racks should be strategically installed around the exterior of the buildings and a pumper truck should be prepositioned as near as possible to Giant Forest.

Rehabilitate Mechanical Systems - Market, Comfort Station and Ranger Residence. Plumbing, heating and ventilation systems would be brought up to code and improved for appropriate utility as part of the proposed rehabilitation. Work on other systems, including insulation placement, wall and window rehabilitation, electrical work, etc., should be coordinated with these treatment recommendations (see Mechanical Engineer's Report, Appendix D).

Market--Remove all three ceiling hung gas heaters which were installed about 1938 or later and are inadequate for proposed functions; and remove all plumbing pipes and fixtures; none are historically important, most are deteriorated and jerry-rigged, including three lavatories, hot and cold water lines, one water heater and associated soil lines. Install a new central heating system appropriately metered for concessioner/NPS cost tracking.

An oil fired boiler with perimeter baseboard radiators is the mechanical engineer's recommendation, although it may be excessively intrusive. More flexibility of space use and less intrusiveness could be achieved by using a forced air or combination of systems. Equipment and distribution lines would be located in the attic, crawl space or otherwise out of view and only the radiators or air grills themselves would be present in each room. A fuel storage tank may also be required and to reduce visual impact should be placed unobtrusively or underground. The selection of the most compatible system (or systems) can be made as design development proceeds.



A gravity-type passive ventilation system is currently used and employs wooden ceiling grills (see figure D-8 in Appendix D) and the dormer windows. This approach is encouraged and should continue although a mechanically assisted system (exhaust fans) would also be necessary to facilitate air exchange. The new ventilation system would be mounted in the attic.

Install a new handicapped accessible unisex toilet room with one water-saving type water closet and one lavatory and supporting fixtures and specialty equipment. Install one convenience and one utility (janitorial) lavatory (or mop sink) in each functional half of the market for staff use. Install one gas fired or on-demand electric water heater in each half of the market.

Comfort Station--The existing 1980s electric furnace is adequate; however, replace or repair flexible air duct lines. Replace 6 water closets, 3 urinals and 4 lavatories and all associated piping (installed ca. early 1960s) along with worn-out associated piping. Select new water-saving type fixture grade with heavy use in mind. Insulate new water pipes. Install new stall partitions, accessory fixtures and speciality equipment for complete visitor services. Design detail decisions have not been made, at this stage, concerning hand dryers vs. paper towels, selection of other service dispensers, vanities/mirrors, etc. However, it is recommended to consider installation of stall partitions and fixtures which are in-character with the historic structure; for example, wooden or wood-appearing stalls rather than modern bright colored enameled steel, and "old fashioned" style fixtures rather than ultra-modern. Hot water is not currently provided at the comfort station and the proposed design continues this practice.

The present use of windows and doors for natural ventilation should remain the primary means of air changing during warmer months. To complement natural ventilation and as a winter alternate, installation of new exhaust fans (one each side) is recommended. These would be door switch activated and mounted in the attic gable end walls and would



result in a minor intrusion on the historic exterior appearance. This intrusion is felt justified in order to encourage sanitary conditions while avoiding the tremendous heat loss which currently results from ventilating through open windows and doors year-round. The new exhaust vent windows would be wooden louvered and should be sympathetically detailed to optimize historic architectural compatibility.

Ranger Residence--While some mechanical system rehabilitation was conducted under PRIP, it did not include crawl space piping. It is recommended to replace this deteriorated and exposed piping as part of the FY 94 project in order to extend the functional life of the residence.

The condition and age of the existing heating fuel storage tank is unknown. It has been observed, however, that it does not meet current environmental safety standards of construction. Its replacement is recommended. An above-grade replacement would be more economical but, because of the visual impact on the ranger residence site, an above grade fuel tank is not recommended. An unobtrusive above-grade installation is possible if it will not destroy cultural values of the historic scene.

Rehabilitate Exterior Walls - Market and Comfort Station. Involved in this recommendation would be the removal of interior layers of paneling and furring to expose the inner surface of the outer wall skin of the market and comfort station. Deteriorated pieces of the exterior wall skin would be repaired/replaced. A frame or furring would be installed to create a cavity to receive insulation and a vapor barrier. Appropriately fire-rated sheetrock would then be applied. In some locations, such as the rear of the market and mechanical chase of the comfort station, the sheetrock would become the finish surface and require only painting. In other locations, an additional final finish layer would be applied. In the market this final interior finish would reuse the knotty pine paneling and wainscotting previously removed or duplicate a similar compatible appearance. In the comfort station, an easily cleanable and sanitary finish surface would be installed, for example Marlite. The ceiling of the comfort station, wall, door and window trim and higher areas of the walls



would be of wood and it is recommended to reuse at least in part the historic tongued-and-grooved material which appears to be extant beneath the modern sheet formica finish.

Window and door trim and surrounds would have to be modified and extended on the interior to accommodate the two to four-inch thicker walls proposed. At the market, existing base boards and crown molding would be reused or could be easily duplicated from 1x4 and 1x8 knotty pine stock. A ceramic tile base is recommended for the comfort station which has its original concrete floor.

Wall rehabilitation would achieve four important objectives: (1) bring the walls up to fire code resistive requirements; (2) improve thermal performance--energy conservation--which would be further improved by including insulation in both building attics; (3) reestablish a uniform and reliable moisture barrier; and (4) reestablish an appropriate, compatible and functional interior wall surface and finish.

Ceiling rehabilitation recommended in both buildings is similar to that of the walls except furring will not be necessary and insulation can be installed from inside the attic. A plywood walking surface (which would provide additional structural reinforcement) would be installed in both attics after insulation to both protect the insulation and provide a safe floor for installation and maintenance of electrical and mechanical distribution equipment.

Rehabilitate Windows - Market and Comfort Station. It is recommended to rehabilitate the windows of the market and comfort station to operate as part of the ventilation scheme, to increase their thermal performance and to generally restore their design appearance by preserving their fabric. Excessive layers of paint would be removed, hardware would be cleaned and functionally restored, and broken or missing elements would be replaced.



In addition, weatherstripping would be installed at operable sash and new storm sash would be manufactured in a compatible wooden design for each window.

The non-original glass panes at the comfort station would be removed and replaced with glass which duplicates the historic in appearance to eliminate the present mis-matched glazing pattern. A design detail utilizing a thermal pane (double glazing) should be explored as part of this treatment and if found to be appropriate would eliminate the need to manufacture some storm sash.

Rehabilitate Electrical System - Market, Comfort Station, Ranger Residence and Garage. In this treatment, existing wiring, outlets, fixtures and associated panels and equipment would be removed from the market and comfort station and a new system, meeting current National Electric Code, installed to meet the proposed functional needs (see Electrical Engineer's Report, Appendix C). Incandescent lighting fixtures would be employed since fluorescent lights are not generally compatible with historic structures of this period.

As an interim measure, the non-grounded A/C outlets in the comfort station, ranger residence and garage should be made inoperative by installing cover plates over them. If service is continued, in the final treatment, GFCIs would be placed at kitchen and bathroom outlets in the ranger residence and at all outlets of the comfort station and garage.

The four or five antique electrified gas fixtures in the market, which are thought to be associated with its earlier period, could be salvaged and reused in the proposed scheme. Some electrical conduit, installed in 1975-76 might also be reused. The final electrical layout will need to be coordinated with proposed walls, crawl space and attic rehabilitation work and should be coordinated with exhibit design layout and concessioner improvements.



Remove/Relocate Exterior Utility Accretions - Market and Comfort Station.

The proposed utility system rehabilitations would provide the opportunity to clean up the cluttered array of exterior connections that have evolved over the years at each building. Also, it would be possible to eliminate the use of the comfort station as a utility panel center when most of the structures are removed from the village.

Since electrification came after construction of the market and comfort station, the proposed services would be connected in a discreet and unobtrusive manner and panel boards eliminated from exterior facades.

Vent stacks, plumbing clean outs, gas line valve boxes, etc. which will no longer be needed at the two buildings once the new services are installed would be eliminated. See Scope of Work for Area Study, below, for recommendations for below grade utility service which would result in elimination of aerial connections, mast heads and the clutter of site wiring.

Resurface Concrete Floor of 1938 Addition - Market. The concrete floor of the 1938 addition is about 1287 square feet. Its surface is damaged and has been patched in several places. The treatment proposed here would include a thorough clearing, removal of loose areas and resurfacing to give a clean, consistent and unbroken surface throughout. This would be done using a self-leveling resurfacing product (such as POR-FLOR, PF-60 by Concrete Products, Inc. of Woodland, CA) to avoid creating a change in floor elevation of more than a fraction of an inch. At the south end where the unisex toilet facility would be located, a raised or platform floor to create a chase for piping between the existing surface and the new floor should be considered to avoid unnecessary concrete removal. However, wheelchair access from the interior should also be considered in the final design.

Improve Accessibility - Market. Several actions are recommended to improve the accessibility to the market. The installation of a unisex handicapped accessible toilet facility at the south end of the 1938 addition



would involve the most extensive historic architectural intervention. (See analysis subsections "Implications of Proposed Use" and "Compliance with Regulations.") Both wooden and concrete portions of the south wall would be cut and a window removed to make way for a new 34-inch wide door. A new walkway would be required between the parking area and new unisex toilet. The location of the proposed walkway and its design are shown on the drawings as an integral part of other site work recommended above to eliminate site slope and drainage problems. The combined site improvement project would include removal of one 18-inch diameter Sequoia tree which was planted in the 1930's and has grown up less than 5 feet away from the market. It should be removed anyway to protect building and chimney foundations.

At the front of the market, doors would be repaired and restored for ease of operation and be fitted with panic hardware to function as emergency exits. The hardware would be handicapped compatible and color and size selected for historic compatibility. The existing (1970s and earlier) walkway surfaces would be replaced and the new walk sloped to give easy wheelchair access to some of these doors. Walkway modifications, as discussed above under site work are recommended to produce positive surface drainage and to reexpose buried crawl space vent windows.

Wheelchair access would be provided to the unisex toilet and to both entry doors of the NPS-half of the market. Impaired visitors would also be able to access the concessioner-half of the building by using a ramp as part of the porch entry development. Although visually intrusive, the proposed porch and ramp would not impair cultural values nor damage the building while providing safe access to northwestern doors.

Using Uniform Building code (UBC) formulas, visitor occupancy in the concessioner half of the market is not expected to reach a level requiring two means of egress. The proposed design, however, provides the use of two front doors, one each at the store and the food sales area. In the NPS half of the building, on the other hand, calculations indicate that occupancy could exceed fifty people--establishing a class C assembly



occupancy load--and therefore, a minimum of two means of egress is necessary and included in the proposed design. And, exceeding Federal Accessibility standards, these would be handicapped accessible.

Modify Wall Partition Layout - Market. The interior rehabilitation of the market would include removal of some existing and construction of new wall partitions and doorways to serve the proposed functional needs. For reasons of historic and/or structural integrity, some walls should not be removed (see "Compatibility Guidelines"). Furthermore, it is part of this recommendation to salvage and reuse the knotty pine paneling and the room 102 paneling wherever possible. The wood paneling in room 102 is painted but might be salvagable and reinstalled with its reverse side showing. The proposed treatment drawings illustrate walls to be retained, walls, features and equipment which could be removed without adversely affecting cultural values, and areas of wall paneling that should remain undisturbed or, if removed, salvaged for reuse.

Other features of architectural and interpretive interest include the Sequoia wood bar and several hand carved wooden "market" signs which presently decorate the Fireside Lounge. If possible, although non-fixed assets, it is recommended to explore acquisition of these for reuse in the proposed visitor contact/interpretive half of the market. The hand carved signs are thought to be original to the market and thus of curatorial value.

#### Ongoing Protection and Preservation Work

The final treatment recommendation of this HSR is to implement an operational program of protection and ongoing preservation maintenance. Being occupied/staffed would facilitate their security surveillance and protection. An ongoing program of preservation treatments would be directed by a historic structure preservation guide (HSPG) and the work performed by appropriate preservation specialists. The HSPG should be programmed for development concurrently with the construction project



(FY 94) to enable optimum data gathering including documentation of materials and procedures employed, and so that it would be ready for implementation upon completion of the rehabilitation projects. The HSPG should cover the subjects outlined in NPS-28--inspection procedures, maintenance schedules, instructions and reference materials--and specific subjects as follows:

an integrated pest management program (IPMP) to prevent insect infestation;

a schedule of conscientious inspections to include attics and crawl spaces

paint schedules based on the colors specified in the HSR

duplication standards for various architectural fabrics such as paneling, comfort station glass, roofing, finish trim, and flooring

specific procedures to maintain positive site drainage and snow management

operational instructions for mechanical equipment, fire detection/alarm system and passive ventilation systems.

#### Compatibility Guidelines - Market

New finishes, exhibits, furnishings and equipment would be installed in the market to complete the proposed rehabilitation and to facilitate the intended new functions. At the design development stage, which will follow the HSR, additional input from the concessioner and from HFC exhibit designers will be necessary to evolve and refine many design details. The approved HSR will function as the basis for that stage in the design process. Concession agreements should reflect NPS concerns regarding architectural modifications and built in additions, methods of



display, color, etc. To assist in that purpose design compatibility guidelines are provided as an element of the recommendations. Also, specific historic architectural constraints are discussed and a listing of the market functional program is provided as part of these design guidelines.

Design Compatibility. At the time of final design, several considerations are recommended to achieve historic design compatibility and uniformity of character in new construction, equipment, color and furnishings selection and concerning visibility through windows and building signage.

New Construction--New partitions should be appropriately one hour fire rated. Wall finish surfaces and trim should be painted or made of wood (knotty pine) where possible. The reuse of salvaged knotty pine paneling is appropriate. Structural additions to the market, such as new rooms, lean-tos and covered decks, are not recommended while interior modifications are anticipated and covered under the MOA.

New Equipment--Modern water heaters, furnace, duct work, conduit, electrical and alarm panels and fixtures, store display cabinets, shelving and appliances, etc. should be made of wood where possible or located out of sight or masked behind wooden covers. The general public interior spaces of the market should not be cluttered with modern equipment, but rather, should manifest the NPS-Rustic character as much as possible. In the proposed treatment plan, all modern equipment installed as part of the rehabilitation would be placed in the shed-roofed addition or in the building attic and crawl space. Where heating registers, detection equipment and new electrical outlets enter the public areas, these would be located and selected based on the least visually intrusive characteristics.

Color and Furnishings--The character of the market interior is wooden and simple. Wooden floors are pine and should be oiled and waxed. Wooden paneling and trim (knotty-pine) varnished. Painted surfaces and carpet color should be muted, ordinary and of wood related



hues from off-white to beiges and tans to very light greens and browns and wood-like blond. Stark primary colors and bright modern colors, such as orange, purple, bright yellow, deep blues and red, should not be used.

Furnishings should be simple and traditional rather than shiny and modern. Steel (or chrome) furniture should not be used but instead, wooden chairs would be in-character. Vinyl or ceramic tile flooring (in utility areas), counters and cabinets should again be of wooden-related hue and tone. Bright colored, molded plastic is not in-character.

Fenestration--That which is built or installed on the interior, because of the extensiveness of windows, will most likely be visible from the building exterior. Windows should not be blocked or covered--the pattern of window fenestration should not be interrupted. Partitions and equipment installations should not intersect windows. The approach taken should leave the exterior historic appearance unimpaired.

Signs and Exterior Accretions--Signs have always been hung on the exterior of the market. These have consistently been of carved wood, single large boards with recessed letters painted white and appropriate to the character of the building. A continuation of similar signage is appropriate while the size and number of signs should be the minimum necessary to achieve the purpose, such as one or two at each entrance.

Other accretions on facades and on the roof should be discouraged. Where utility service connections and venting is necessary, these should be kept to a minimum in number and size and located on rear, less visible elevations.

Lighting--Exterior area lighting is appropriate and several generations of fixtures have been employed at the market since the 1930s. New fixtures should continue to be utilitarian, non-decorative, of simple design, painted similar to adjacent building colors and placed under eaves in protected and unobtrusive locations.



General interior lighting should be of the incandescent type, ceiling or upper wall mounted, not recessed and fixtures should be selected from old-fashioned styles, although not excessively decorative aiming toward an appropriate expression of rustic character. Special area lighting may be of a clearly modern design, obviously expressing contemporary purposes but not fluorescent tubes. Reuse of the extant electrified gas light fixtures and similar designs is recommended.

Historic Architectural Constraints on Treatment. The adaptive rehabilitation of the market could involve a significant alteration of its interior without destroying those qualities for which the building is listed on the National Register of Historic Places. The most significant cultural values are exterior facade characteristics. Only the stone fireplace and the knotty pine paneling are cited in the National Register Form as significant interior features. To these two features, the authors would cite the wooden strip flooring as another distinguishing original quality and point out the paneling is on the ceiling of some rooms as well as walls. To this list of significant fabrics should also be added structural feature constraints, fenestration considerations, and the imperative that "every reasonable effort shall be made to provide compatible use [within the existing physical form] . . . that requires minimal alteration [of that form whether distinguished or not]" (Secretary's Standards). A list of architecturally significant features is included in the "Physical Description" subsection, above and a floor plan showing features for salvage can be found as sheet 3 of the Proposed Treatment drawings. These should be consulted prior to any design on the market.

In response to these observations, the following specific list of constraints on the rehabilitation of the market are provided as a guide to the NPS treatment scope as well as to a concessioner's remodeling intentions:

Floor--The wood strip flooring shall be preserved in situ. Where damaged or deteriorated, its replacement shall be accomplished by using material duplicating the original species of wood, mill finish, and



dimensional appearance. Removal of flooring to access hidden areas of the building shall be reinstalled or replaced as above. Floor coverings may be installed in limited areas when that installation, if removed in the future, will leave the original flooring unimpaired.

Exterior Wall Paneling--Where exterior wall shiplap paneling is exposed on the interior, it may be covered up (insulation plus sheetrock, for example) but it should not be removed unless deteriorated and replaced in kind.

Interior Wall (Partition and Ceiling) Paneling--Knotty pine paneling has been discussed repeatedly. It is cited as significant in the National Register nomination form. Its removal and reinstallation will be necessary as part of the proposed work. The mitigation will require its reuse and the use of similar material is encouraged as part of new work to establish a continuity of character (see Proposed Treatment drawing sheet 3).

Fireplace--The stone fireplace in room 100 should be kept operational (cleaned and preserved) and should never be blocked, covered up or taken out of the historic scene. It, too, is cited as a significant interior feature of the market in the National Register Form. Safer and more energy efficient retrofit stoves or even "fake" gas "fires" are not recommended here, but are not disqualified if deemed necessary in the future as long as the feeling and appearance of the large stone fireplace and hearth are not impaired.

Structural Systems--New (future) work should not involve removal or alteration of the building's structural systems (foundation, load bearing walls, beams/joists/rafters, or roof truss). Some stabilization of structural elements are proposed in this HSR. They are designed by a structural engineer in consultation with an historical architect and intended to reinforce existing systems (see "Recommendations" above).



Load bearing walls that should not be disturbed include not only the exterior building wall but also the load bearing partition which separates room 101 from rooms 102, 103, 104 and 105, and the former (original) rear wall of the market which currently separates rooms 100 and 101 from the shed-roofed addition (rooms 106-112). The original rear wall of the market includes a 6-inch high concrete foundation stem and 8x8 timber framing, some of which have already been modified. Future modifications are not appropriate (see Proposed Treatment drawing sheet 3).

1938 Additions--The 1938 additions were placed on the buildings least significant elevation (east). They are less significant, both in their exterior and interior features than other areas and facades. The exterior of the additions is, however, compatible and future alterations should be undertaken only when all other rehabilitation (or addition) options have been explored. The 1938 additions are the least finished on the interior of any spaces. Generally, they are unfinished except for some plywood, and merely the exposed unfinished side of other walls. The application of new finishes is not discouraged. The proposed treatments (see above) would include new finishes on part of the walls and ceiling of the additions for fire-resistive and insulative upgrading purposes.

Miscellaneous--The use of fluorescent lighting is not recommended; it is out of character. The rehabilitation of mechanical and electrical systems (heating, lighting, plumbing, fire alarm, etc.) should be undertaken only after comprehensive design intended to serve all functional needs and within the context of the entire developed area. Support systems should not be built piecemeal, part now, part later and then further modified later, still, in order to avoid subsequent building interventions and in order to maintain code uniformity. Support system comprehensive design should take place after infra-structure decisions concerning the entire village are made by the Area Study process.

Historic architectural constraints on future treatment should basically be founded upon the secretary of the interior's standards, the stipulations in this HSR and, in particular, should not introduce measures which go



beyond the "Assessment of Effect" subsection below unless initiating additional compliance procedures. The concession services and NPS areas should be a state-of-the-art operation geared towards function and historical compatibility. All new work should be date stamped.

Functional Program. The proposed functional program of uses and their relationships for the market includes general features plus the specific activities for the NPS half and the concession operated half.

General--The following functional recommendations are derived from a combination of discussions with park personnel and the analysis sections of this report.

Division of functions--Visitor contact/NPS functions are to be located in south half; concession-half/NPS-half are to be separated but communication between shall be conveniently accommodated;

Handicapped toilet--The market building is the best location to provide handicapped toilet facilities; the new handicapped toilet should be accessible from the exterior (as is the comfort station), but visitor entry from inside the market should not be provided to prevent universal use and overload on the new toilet; the new toilet room should be of the unisex type meeting contemporary design standards;

Mechanical/electrical room--The two halves of the market may share a common mechanical/electrical room, or these spaces may be separated for operational reasons but placed back-to-back;

Heating system--Heat may be provided from a single plant on a zoned and local-area controlled system with the building halves metered separately or may be designed as two separate systems depending upon space-function needs, operational requirements and the resolution of utility service considerations by the Area Study;



Egress--Emergency exits will be provided in a quantity to meet or exceed code requirements, will be fitted with appropriately selected panic hardware and exist signs; exit signs may be exterior illuminated type and emergency lighting for the path of egress and exit signs will be necessary and could be of the battery type.

NPS Functions and Visitor Contact/Interpretive Features--The following activities, functions and spaces are derived from the IP and park and regional office staff input and are to be provided in the south-half (NPS-half) of the market.

Information desk--This should be a focus for park visitor orientation, and distribution of information including "how to enjoy the Giant Forest" and other areas of the park. It should be a large enough for two employees at busy times. It should provide information about sequoias and function as a trail center, being at the trail head of the extensive Giant Forest trail system. The counter should be located with good sight lines from entries and from the counter to the exhibit space in order to permit adequate surveillance. Reuse of existing (1980s) sequoia wood bar top (in room 100) is not discouraged.

Fireplace--The fireplace should be used in winter. Around it should be provided a visitor gathering area; this is possibly the best place for some seating for both temporary resting and warming and for brief interpretive talks.

Circulation--Efficient and generous circulation is necessary with heavy visitor load expected. Aisles will not be less than 36 inches wide to meet code (NFPA) requirements. Because of wet and snowy conditions, a floor covering such as carpet should be considered to protect wooden floors. Corridors should be broad to handle not only large numbers but some visitors in wheelchairs. Travel distance to emergency exits shall not exceed 150 feet.



Exhibit area--It should be spacious and large to display major interpretive purposes, simply, directly and using graphics, including reproductions of historical photographs, maps, etc. The 3 major purposes are: (1) introduction to historical themes--early park development (especially at Giant Forest) and NPS-Rustic style architecture, (2) why the relocation of development was necessary, and (3) introduction to natural history - fire requirement/ecology of the sequoia (IP-1986). Where possible, interpretive media should be designed for building compatibility and materials selected in response to the operational fireplace.

Publications/Sales--Literature and other sales items should support interpretive and park orientation role and should include souvenirs of the visit. The location of publications and sales materials carried by the cooperating association is an unresolved operational issue (NPS-half vs. concessioner-half of the market).

Staff-areas--Space should be provided for administrative activities and limited paperwork (at least a desk and file area, maybe an office) and for staff lunch consumption (could include a lavatory and counter with lunch storage cabinets and/or refrigerator).

Storage and support areas--Spaces should be provided for hanging coats/personal belongings of staff, for storing equipment like snow shoes, firewood, and park brochures and maps. A janitorial closet should include space for a mop sink and storage of toilet expendibles and cleaning materials and tools.

Waysides--Information dispensing "pods" and interpretive wayside exhibitry are to be accommodated near and around the market (a minimum of 3 are recommended in the IP). Their location and design are largely beyond the purview of this HSR and should be further explored as an element in the Area Study.



Concession Functions--The following activities, functions and spaces are derived from the 7/10/84 Acting Director's memorandum and park and regional office staff input and are to be provided in the north-half (concessioner-half) of the market:

Size--"you [concessioner] will be assigned 1/2 the floor space";

Food sales--"over the counter" food sales will be provided, but "no on-site food preparation or hot food except: warmed by microwave oven & quick heat devices". Non-alcoholic beverages, except beer (but no wine) are to be provided. Finger foods/snacks (eg, prewrapped sandwiches, hot dogs, chili, soup, chips, pretzels, crackers, candy bars, sweet rolls, etc. as approved by Superintendent) are to be provided. The 1946 walk-in cooler (rooms 109 and 110) and the ca. 1984 cold storage building behind the market would be removed under the proposed plan. The concessioner would provide self-contained units for cold food items as well as the necessary display shelving units; historical compatibility will be a criteria for selecting food sales equipment designs;

Seating--No on-site seating is to be provided. A picnic area adjacent to the market should be designed as an element under the Area Study recommendations;

Water and Sewer Limitation--"Service will be with disposables so water and sewer needs will be at a minimum". A staff lavatory and janitorial mop sink are the only fixtures recommended under the proposed treatment plan;

Sales Area--"you may have a quality retail sales area" -- stress quality items of a gift/souvenir nature including film. The sales counter(s) and merchandise display shelving units will be provided by the concessioner and designs and styles of this equipment will be selected for rustic-style, historical compatibility;



Egress--Dead end corridors will not exceed 20-feet in length and paths of travel to emergency exits will not exceed 50 feet; aisles will be a minimum of 36 inches wide; for the rear loading doors to qualify as an emergency exit an unobstructed path at least 44 inches wide through the storage space is required under NFPA-101.

Delivery area--The existing loading doors would be preserved under the treatment plan and a new delivery area built including a "bridge" across the proposed drainage ditch; the service road behind the market would continue in use although, subject to the recommendations of the Area Study, its size/configuration may be changed.

### Scope of Work for Area Study

A detailed study is programmed for preparation in FY 89. It is envisioned as a comprehensive (un)development concept plan. It will stipulate the redevelopment needs concerning both the removal of existing development and enhancement of the development to remain at Giant Forest. A number of market, comfort station, ranger residence/garage treatment issues cannot be resolved, entirely, until the larger Giant Forest picture (after development removal) is planned. The following is a listing of issues which impinge upon the subject of this HSR that should be addressed and resolved by the Area Study.

Picnic Area(s). The market will provide food sales but no on-site seating in the approved DCP; therefore, an area or areas for day use visitor food consumption should be planned in the Area Study. One might be located north of the market a short distance from the food sales function.

Trails. Some areas are to be removed, some new paths are to be installed to connect with remaining trailhead nodes (e.g. parking areas, the market). See IP (1986) for additional comments.



Parking. Parking for overnight lodging and cafeteria building dining will no longer be necessary (will be removed); however, parking for market visitors and staff will be required--how much and its location/configuration needs to be resolved. The existing parking in front of the market is traditional to the historic scene but it may be damaging the large sequoia in front of the market. The use of both log and stone curbing is historic. See IP (1986) for additional comments.

Accessibility. Both parking and trails, especially as they are connected to the market should be designed with handicapped accessibility considerations. Certain parking locations, curb cuts and walkways are assumed in the proposed treatment drawings of this HSR. The authors understand that these assumptions are tentative and dependent upon designs resulting from the Area Study.

Service Road. The service road behind the comfort station and market may be obliterated if no longer necessary. The proposed treatment includes continued use of the loading doors behind the market and includes several site treatments to secure better drainage which could be further improved if the service road was reduced in size. The configuration of the service road should be part of the Area Study recommendations.

Waysides. Interpretive and information dispensing (e.g., maps) "pods" are proposed in the IP (1986). Their location, size and function can be determined only after the final road/parking/trail plan is developed for Giant Forest. One "pod" location is suggested on the proposed treatment drawings, adjacent to the market.

Landscape. Obliteration of development and restoration of the area landscape will be a major element of the Area Study. How this impacts the market, comfort station, ranger residence/garage is yet to be determined and ties into all the issues previously noted. Recommendations for new plantings have not been included in the HSR.



Effluent Disposal System. The HSR has assumed the continuation of the existing or a similar system of wastewater disposal. The Area Study should address the feasibility of this assumption in light of the anticipated enormous reduction in effluent load after development removal. If existing waste treatment facilities will still be unable to meet environmental standards after the load reduction alternative systems should be examined and a redesign considered for the plumbing rehabilitations proposed for the market and comfort station in particular. The Area Study should include a sanitary engineering study of waste water loads and determine the best system for waste water management. The study should confirm the HSR rejection of a "self-contained" system at the comfort station or stipulate design standards for such a system.

Heating Fuel. The HSR assumes the removal of the propane system at the market and replacement of the fuel oil storage tank at the ranger residence. Whether these systems are replaced in kind or otherwise is a matter to be resolved by the Area Study. It has been pointed out that above-grade fuel storage is the most economical approach but that impacts on the historic scene are also important considerations. A central fuel storage/distribution system serving all Giant Forest buildings should, also, be considered.

Water Supply. The Area Study should confirm the continuation of an adequate water supply to the Giant Forest facilities. The study should examine volume, flow rate and expected loads at the buildings, fire fighting systems, public water fountains, etc.

Fire Suppression System. Currently, there are several well placed fire hydrants around the buildings. None of the buildings have automatic fire protection devices and none are proposed at this time for life-safety reasons. Based on the size, type, and use of these buildings fire detection but not automatic fire suppression systems are recommended. Even so, installation of a dry-pipe sprinkler system could be easily added to the market, the only structure planned as a place of assembly and to the comfort station and ranger residence as a means of building



protection. The system, with the exception of the sprinkler heads, could be nearly totally concealed from view. Further consideration of fire suppression alternatives in the Area Study or at a later design phase is recommended. Depending on water quantity and pressure adequacy in the redeveloped Giant Forest area, residential-type sprinkler systems, suitable in this application, may be an inexpensive means of cultural resource protection.

Electrical Service. Electrical service post dates the building of the market and comfort station, making electrical and telephone lines (aerial distribution lines) an intrusion on the historic scene. As a general recommendation such service lines should be placed underground. Again, the comprehensive Giant Forest electrical service picture must be developed before this specific recommendation can be decided upon or designed.

Archeology. A brief archeological reconnaissance was conducted as part of the work necessary to prepare this HSR. In general, very little archeological study has been undertaken in the Giant Forest developed area. More work is recommended in consideration of the removal project anticipated and as necessary concerning additional existing development enhancement (new construction). Also, in particular, an evaluation should be made to determine the extent of archeological clearance (surveying, testing, monitoring) necessary to implement the site work proposed as part of the buildings treatment. The Area Study is the logical place to determine the scope of archeological work necessary to implement the specifics proposed here as well as the comprehensive needs of the larger Giant Forest (un)development project.

Operations. When the market, comfort station, and ranger residence/garage have been rehabilitated, the use and operation of the buildings will involve several changes in park operations: visitor traffic, parking, circulation pattern; NPS staffing; concessioner agreement/operations; maintenance activities (all three buildings will be NPS responsibility including new unisex toilet) and HSPG implementation.



A clearer picture of operational needs should be developed as an element of the Area Study.

### Compatibility Guidelines - Snow Tunnel

The focus of this HSR does not include the "restoration" of the ranger residence--but rather only those treatments necessary to assure its preservation and to facilitate its continued utility. The non-historic snow tunnel, in this context is not a deficiency because it serves as intended the way it is. If and when it breaks down or fails to function adequately, and its replacement becomes necessary, that replacement should be designed to achieve more compatibility with the historic character of the ranger residence to which it connects. The following design guidelines for the future snow tunnel are recommended.

Material. The material of concern is that which will be seen from the exterior, i.e., the skin. This should be wood. Wooden lap siding should run horizontally as on both the ranger residence and garage and not follow the topographic slope of the hill. An exposure of 10½ inches, plus-or-minus, would reflect the size of existing historic siding. An exposed concrete foundation could be stone veneered.

Roof. A gable or shed roof could be employed. A gable should be similar to the 8:12 pitch used here. The roof should include exposed rafter tails and should be made of cedar shingles or roll roofing if a shed is used.

Color. The snow tunnel should be painted using the colors in Appendix G--brown walls, green trim and green roof.

Mass and Proportions. Both the ranger residence and garage are small buildings and a snow tunnel connecting them should also be small; it should be just large enough to serve its purpose. If windows are installed they could reflect the residential window proportions, taller than wide and multi-paned rather than horizontal and single paned.





Compliance. The design drawings for the future snow tunnel should be submitted for evaluation and certification by the regional cultural resources staff prior to construction as with any action that may affect the historic property.

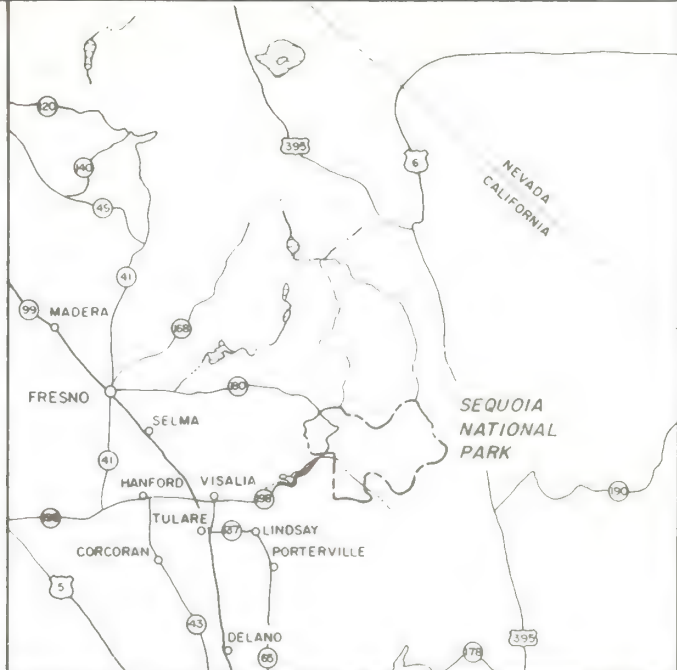






# LEGEND

- BOUNDARY
- COUNTY LINE
- RIVER
- GRAVEL ROAD
- PAVED ROAD
- HQ. HEADQUARTERS
- V.C. VISITOR CENTER
-  RANGER STATION
-  CAMPGROUND



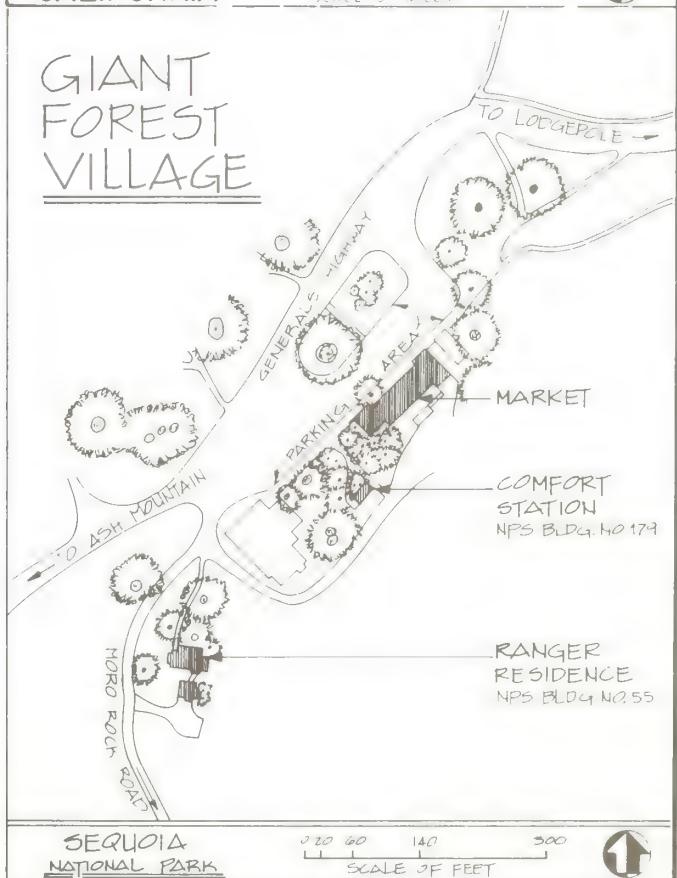
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## PROPOSED TREATMENT

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	TECH REVIEW G HIGGINS	NAME OF PARK SEQUOIA NATIONAL PARK		SHEET 1	
	DATE 3/88	REGION WESTERN	COUNTY TULARE	STATE CALIFORNIA	OF 12



- LEGEND
- BOUNDARY
  - NTY NE
  - RIVER
  - RAVEL ROAD
  - PAVED ROAD
  - HQ. HEADQUARTERS
  - V.C. VISITOR CENTER
  - RANGER STATION
  - CAMPGROUND

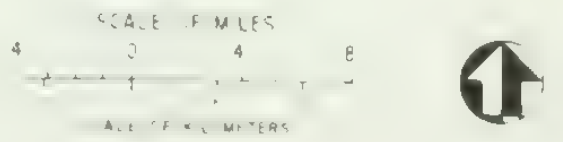
- SYMBOLS
- ASPHALT AND CONCRETE PLAN AND ELEVATION
  - WHITE ELEVATION
  - EARTH (SECTION)
  - STONE SECTION
  - TILE (PLAN)
  - WHITE SECTION

- ABBREVIATIONS
- BUILDING
  - CIRCA
  - CEDAR
  - CL
  - CONCRETE
  - EA
  - ELECT
  - FOUNDATION
  - FT
  - H/C
  - H.P.
  - INFORMATION
  - NUMBER
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  - ON CENTER
  - SEQUOIA
  - SUGAR PINE
  - TIC
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  - VALVE PIT
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- INDEX
- | SHEET | TITLE OF SHEET                           |
|-------|--|
| 1     | COVER-LOCATION                           |
| 2     | MARKET - MARKET STATION - TREATMENT      |
| 3     | MARKET - MARKET STATION - TREATMENT      |
| 4     | MARKET - MARKET STATION - TREATMENT      |
| 5     | MARKET - MARKET STATION - TREATMENT      |
| 6     | MARKET - MARKET STATION - TREATMENT      |
| 7     | MARKET - MARKET STATION - TREATMENT      |
| 8     | MARKET - MARKET STATION - TREATMENT      |
| 9     | COMFORT STATION - TREATMENTS             |
| 10    | RANGER RESIDENCE / GARAGE - TREATMENTS   |
| 11    | RANGER RESIDENCE - TREATMENTS            |
| 12    | RANGER RESIDENCE ELEVATIONS - TREATMENTS |

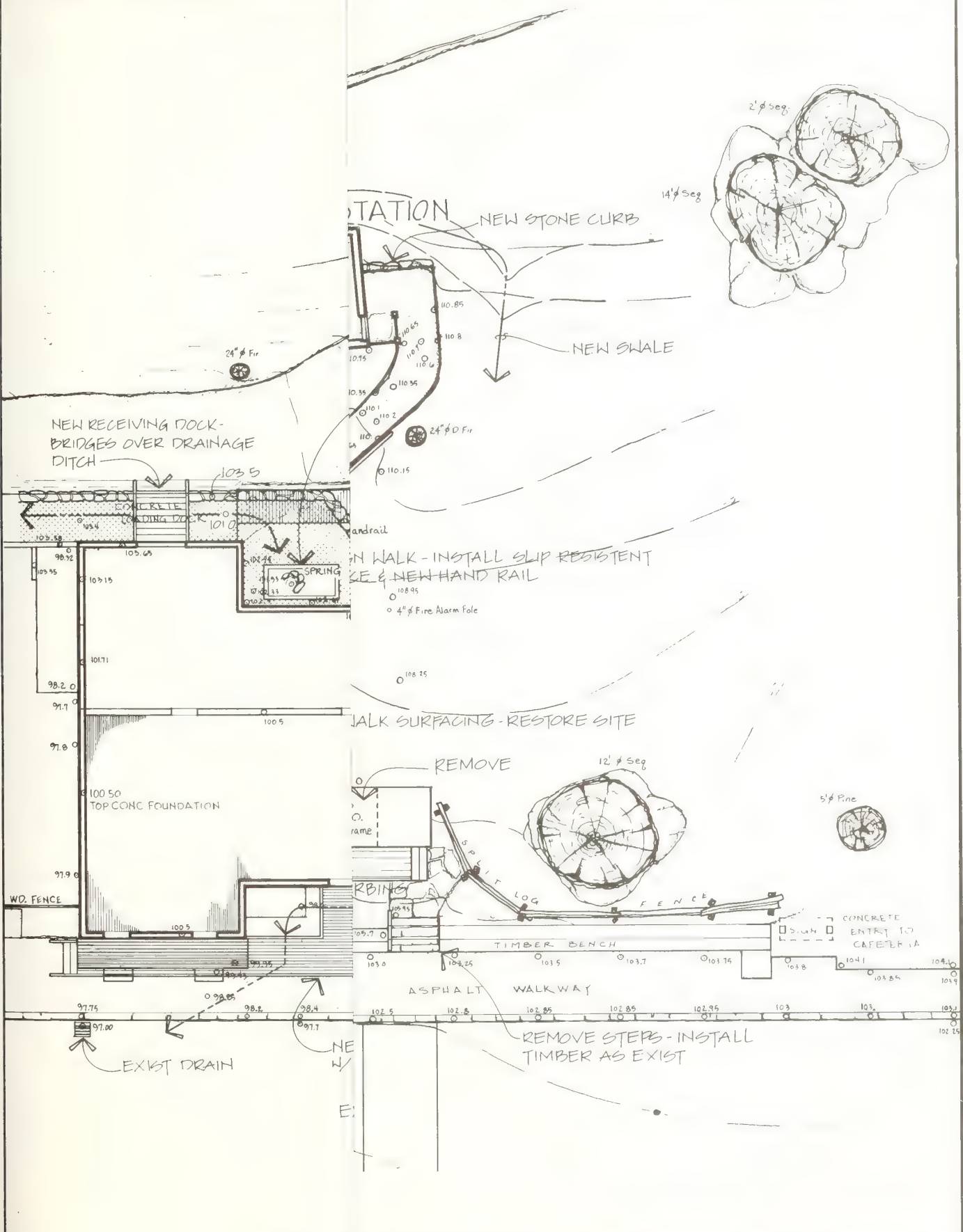


SEQUOIA NATIONAL PARK



HISTORIC STRUCTURE REPORT		PROPOSED TREATMENT	
UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE DENVER SERVICE CENTER		MARKET, COMFORT STATION AND RANGER RESIDENCE GIANT FOREST VILLAGE SEQUOIA NATIONAL PARK WESTERN TULARE CALIFORNIA	
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**MARKET AND COMFORT  
STATION SITE PLAN  
TREATMENTS**

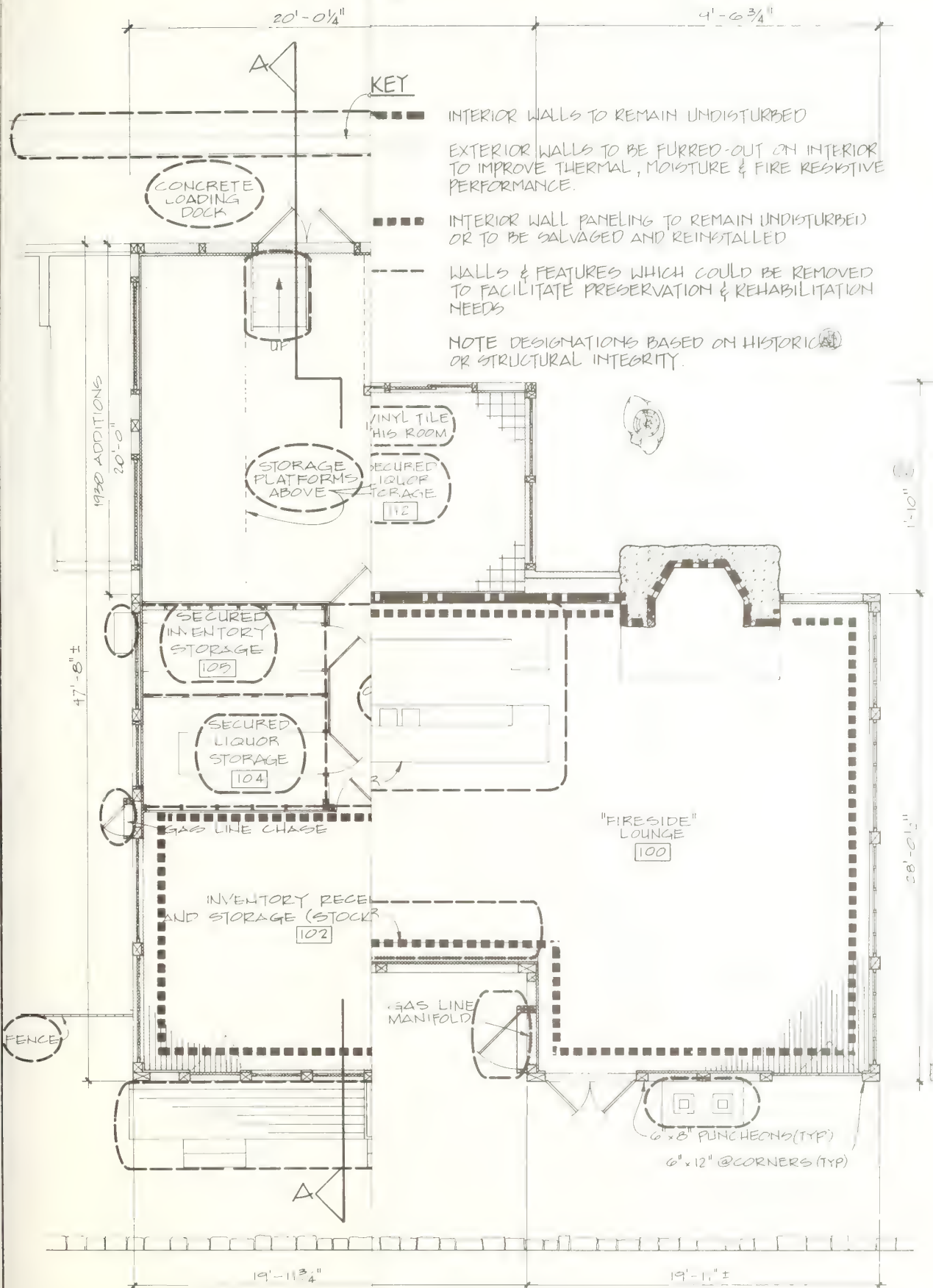
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**NOTE**

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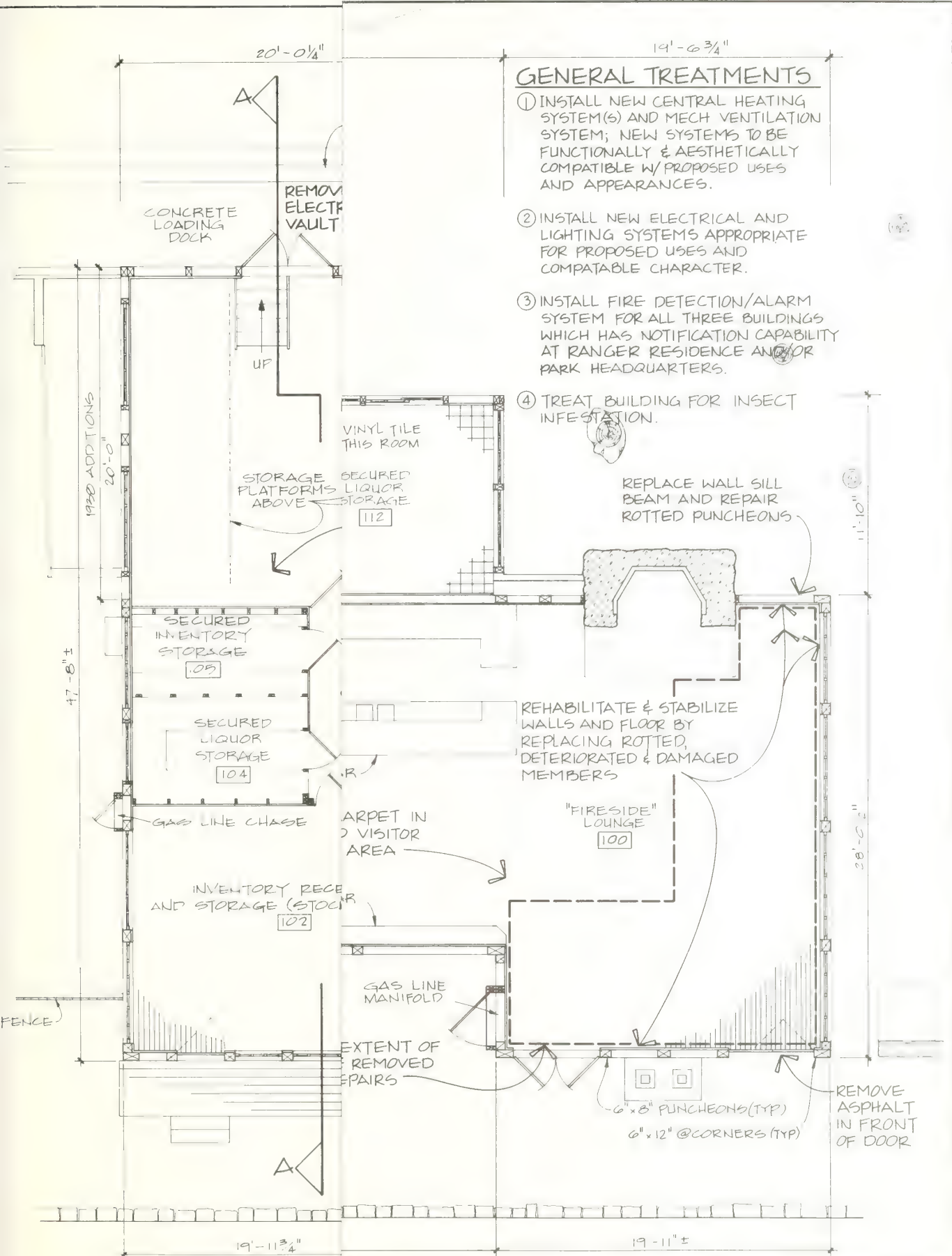
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#### NOTE

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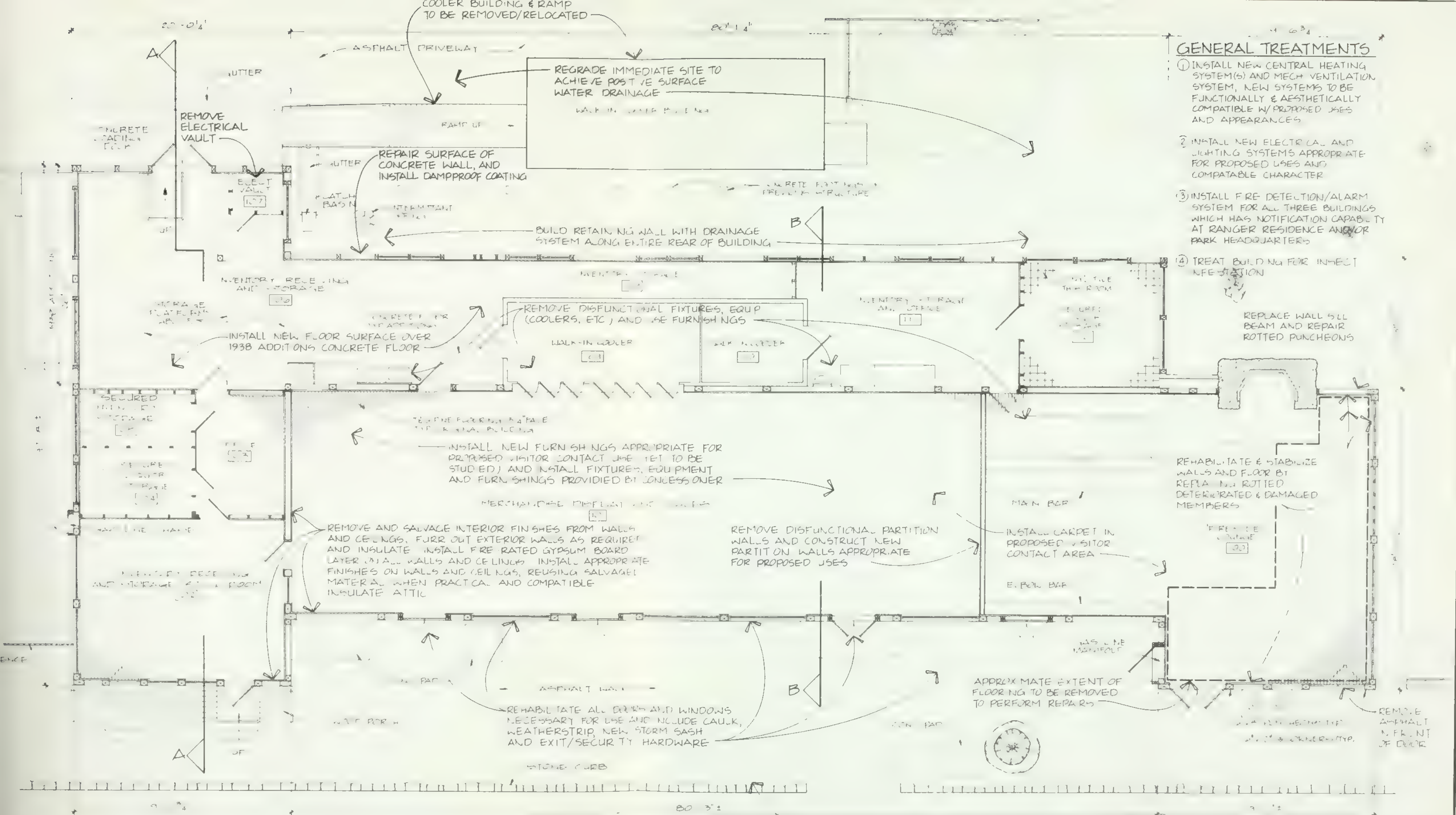
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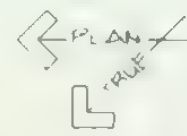


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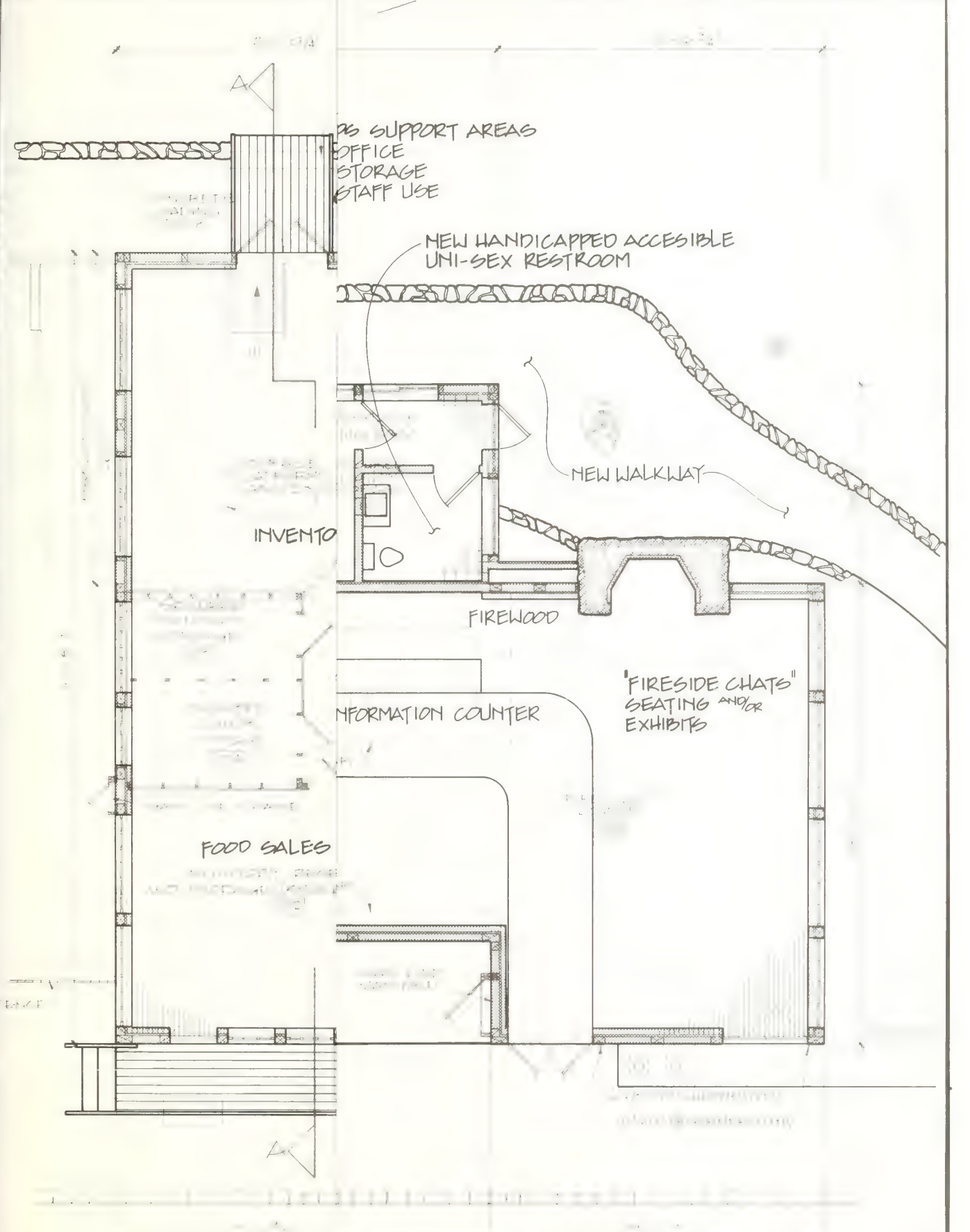
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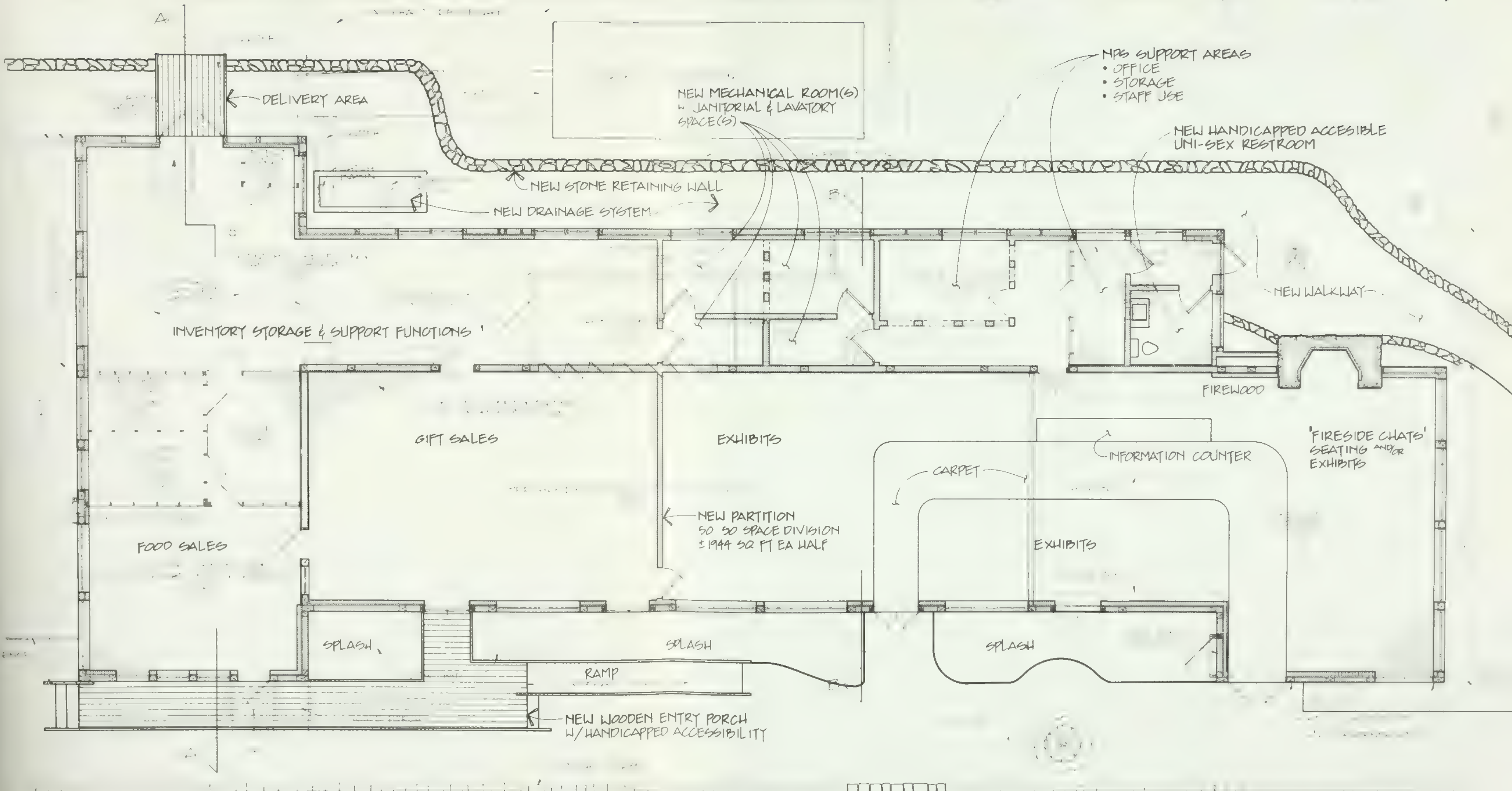


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TECH. REVIEW G HIGGINS			SHEET 5
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# NOTE

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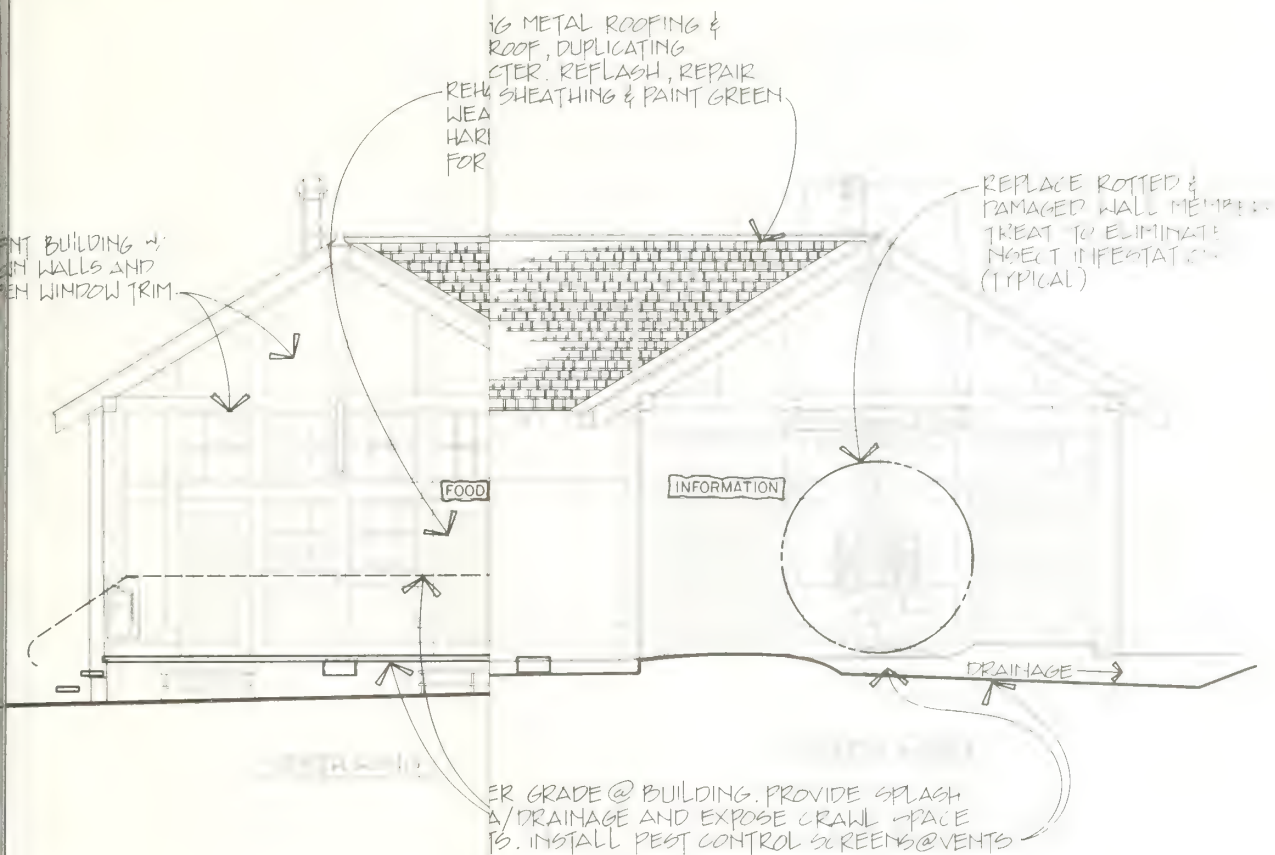
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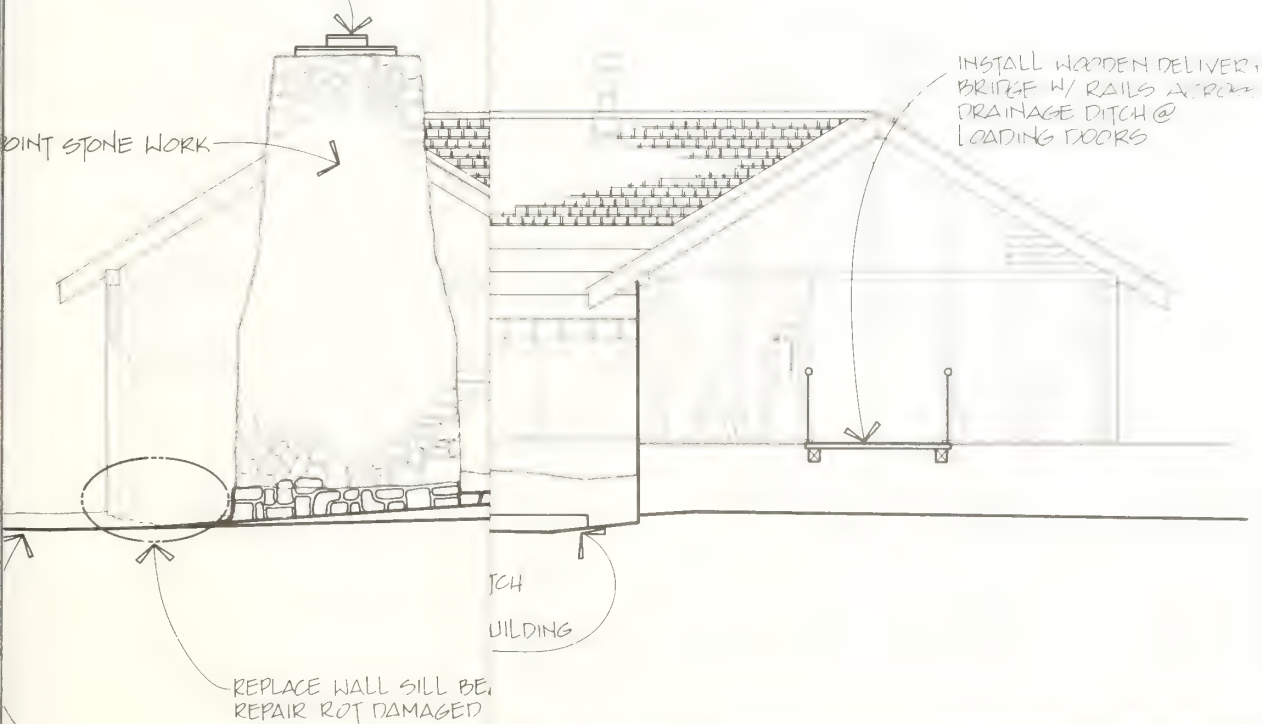
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PROPOSED REHABILITATION

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CLEAN CHIMNEY-INSTALL NEW FLUE LINING, SPARK ARRESTOR & RAIN COVER



LOWER GRADE & INSTALL HANDICAPPED ACCESSIBLE WALKWAY

GRADE IS SHOWN AT BUILDING LINE; PL 5/80

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

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CLEAN WHITE T-SHIRT  
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- LOWER GRADE & HIGHER CLASS

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NOTE GRADE IS SHOWN AT BUILDING NE, FIVE YRS. BEFORE THE NINE YRS. AFTER THE 1900.

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NEL

STALL NEW WOODEN PORCH  
WHICH ALLOWS EASY ACCESSIBILITY  
ALL NECESSARY DOORS

AWL SPACE  
AWL SPACE  
ALL EXHAUST  
JRE VENTILATION

ROLL  
REHAB  
WEATH

NEW DELIVERY AREA

LOWER  
BELOW  
WALL

SITE WORK TO INCLUDE RETAINING WALL  
WITH DRAINAGE SYSTEM ALONG ENTIRE  
REAR OF THE BUILDING AND REGRADE  
OF HILLSIDE FOR POSITIVE SURFACE  
WATER DRAINAGE

ED AZIER MKEL	SUB SHEET NO	TITLE OF SHEET	DRAWING NO
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			OF 12



REPAIR REHABILITATE WINDOWS,  
 INSTALL WEATHERSTRIP NEW  
 STORM GASH PL. & STORM  
 HARDWARE AT OPERABLE WINDOWS

REPAIR PLUMBING & ROOFING TO  
 THE TWO WORK AREAS OF BROWN  
 & GREEN TRIM AT WINDOWS

NEW DELIVERY AREA



INSTALL NEW WOODEN FLOOR  
 WITH ALL CLIMBER & ACCESSIBLE TO  
 ALL NECESSARY DOORS

INSTALL REPAIRS AT RAWL VENTS  
 AND GASKET AT RAWL VENTS  
 ACCESS TO REPAIRS, INSTALL EXHAUST  
 FAN IF REQUIRED TO AID RE VENTILATION

REMOVE EXIST METAL ROOF INSIDE  
 & MAKE ROOF DRY AT NEW LOOK  
 APPEARANCE

INSTALL NEW CHIMNEY FLE UNITS  
 STARK ARRESTOR RAIN GARD

REPAIR CHIMNEY

REFLASH CHIMNEY

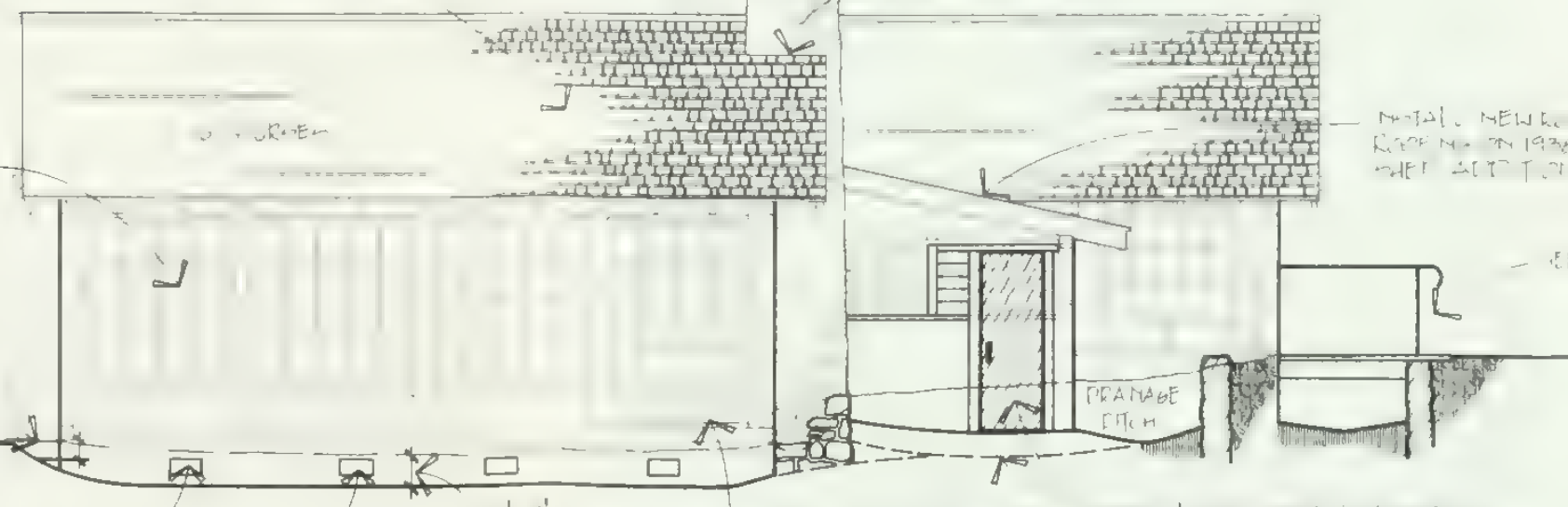
REPAIR GATE WINDOWS INSTALL  
 WEATHERSTRIP AND NEW STORM GASH

INSTALL NEW ROOFING ON 1940  
 SHEET ADDITION

NEW DELIVERY AREA

LOWER GRADE TO 6"  
 BELOW BOTTOM OF  
 WALL ON BEAM TOP

LOWER GRADE TO EXPOSE RAWL  
 VENTS, INSTALL VENT  
 WELLS AS NECESSARY TO  
 PREVENT DAMAGE INTO AND  
 PROLONG LIFE OF VENTS



S. L. H.

REPLACE DETERIORATED  
 SIDING & CAULK TO SEAL  
 JOINTS

INSTALL NEW DOOR TO UNEX-  
 POSED ROOM, INSTALL HANDLAPPED  
 ACCESSIBLE WALKWAY

THE WORK TO INCLUDE REPAIRING WALL  
 WITH DRAINAGE SYSTEM ALONG ENTIRE  
 REAR OF THE BUILDING AND REGRADE  
 OF HILLSIDE FOR POSITIVE SURFACE  
 WATER DRAINAGE

SCALE 1/4" = 0' 10 FT

DESIGNED FRAZER KENNEL	SUB SHEET NO.	TITLE OF SHEET MARKET ELEVATIONS TREATMENTS	DRAWN NO. 102 25,002
DRAWN BY FRAZER KENNEL			PKG NO 2,000
TECH REVIEW			SHEET 7
DATE 5/88			OF 12



MS &  
T 3.

CAVATE - REPAIR RETAINING WALL  
PLY DAMP-PROOF COATING. INSTALL  
DRAINAGE DITCH & WOODEN BRIDGE  
DELIVERY AREA.



INS INSTALL INSULATION,  
FIRE-RATED GYPSUM BOARD  
WOOD PANELING WHERE

SHAKE ROOF

FLOOR SURFACE  
CONCRETE FLOOR

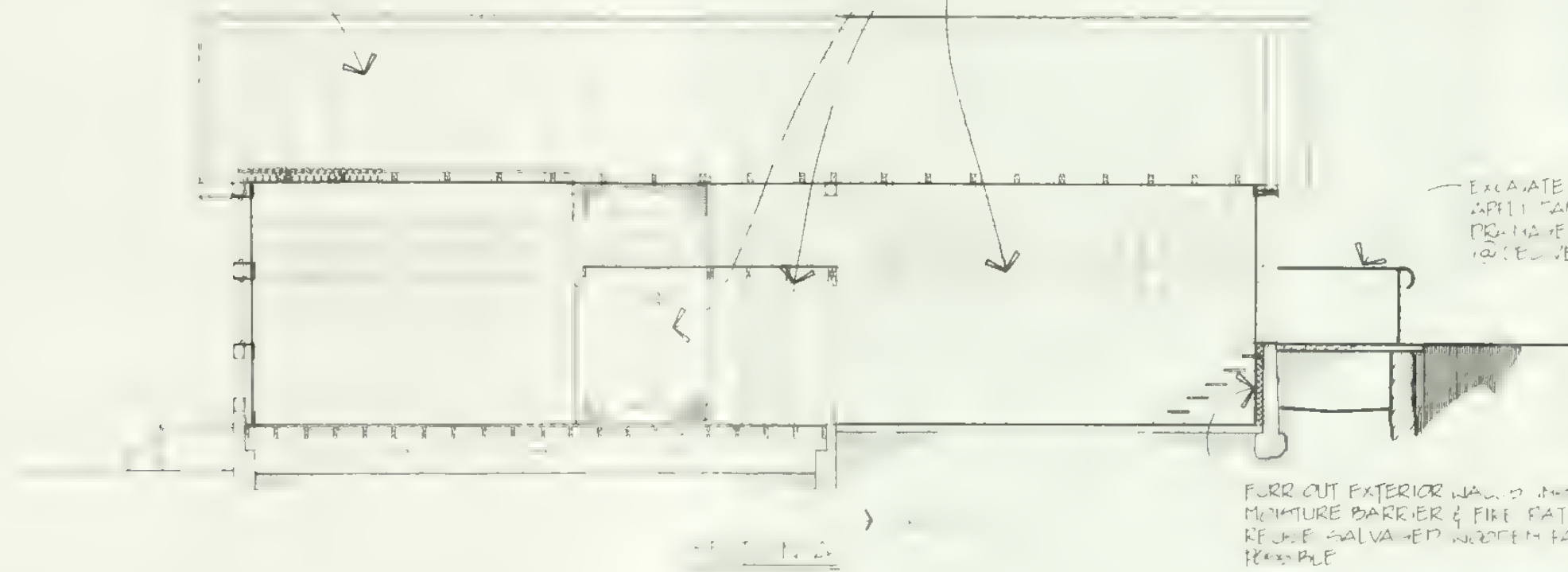
DRAINAGE DITCH & STONE  
REPAIR EXISTING WALL &  
DAMP-PROOF COATING

ED AZER NKEL SM AZIER NKEL REVIEW GINS 2/88	SUB SHEET NO	TITLE OF SHEET MARKET SECTIONS TREATMENTS	DRAWING NO 102 25,002	SHEET 8 OF 12
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INSTALL MECHANICAL VENTILATION  
SYSTEM IN ATTIC FOR ATTIC &  
OCCUPIED SPACES

REMOVE FUNCTIONAL PARTITION, PLASTER &  
EQUIPMENT SEE DESIGN GUIDELINES, SHEET 3



EXCAVATE REPAIR RETAINING WALL  
APPLY DAMPPROOF COATING INSTALL  
DRAINAGE AT NEW RETAINING WALL  
WALL VERT AREA

REMOVE EXTERIOR WALLS INSTALL INSULATION  
MEMBRANE BARRIER & FIRE RATED Gypsum BOARD  
REPAIR SALVAGED WOODEN PANELS WHERE  
POSSIBLE

REINFORCE ROOF WITH NEW GUSSETS, ADJUST  
RAFTERS & TRUSS BRACING INSTALL ATTIC  
INSTALL PLYWOOD WORKING FLOOR

INSTALL NEW HEATING & ELECTRICAL  
SERVICE MATTIC & RAIL SPACE

REPAIR OR REPLACE DAMAGED &  
DETERIORATED RAFTER TAILS

INSTALL SEISMIC REINFORCING AT  
ROOF & WALL CONNECTIONS

INSTALL RAFTER SUPPORT BEAM  
CARRIED BY NEW WOODEN COLUMNS

RESTORE SHAKE ROOF

SALVAGE INTERIOR WOODEN  
WALL & CEILING FINISHES  
WHEREVER THEY ARE REMOVED  
FOR CODE UPGRADE AND  
REINSTALL OVER GYPSUM BOARD

INSTALL NEW FLOOR SURFACE  
OVER 1980 CONCRETE FLOOR

EXCAVATE INSTALL DRAINAGE ON H & TONE  
RETAINING WALL REPAIR EXISTING WALL &  
APPLY DAMPPROOF COATING

EXCAVATE LIMITED AREAS OF CRAWL  
SPACE AT SOUTHEAST TO ELIMINATE  
CONTACT WITH FLOOR SYSTEM AND TO  
EXPOSE VENT WINDOWS INSTALL  
VAPOR BARRIER

REMOVE EXTERIOR WALLS INSTALL  
INSULATION, VAPOR BARRIER &  
GYPSUM BOARD

SCALE  
1/4" = 1'-0"

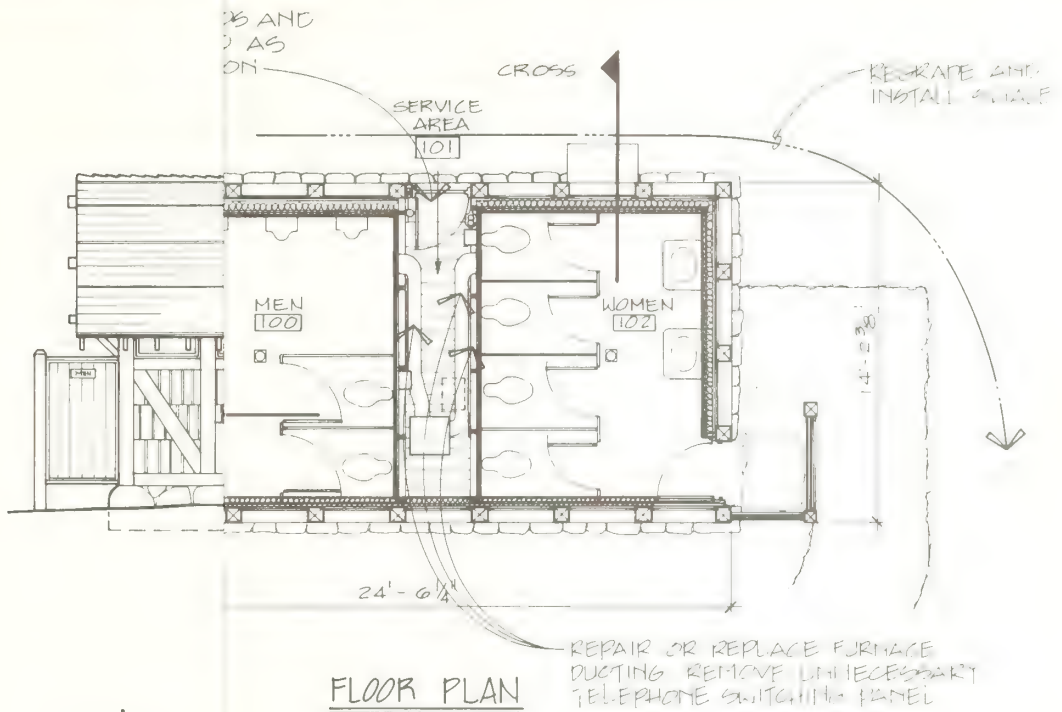
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DRAWN  
BY  
TECH. REVIEW  
DATE

SUB SHEET NO.

TITLE OF SHEET  
**MARKET  
SECTIONS  
TREATMENTS**

DRAWING NO.  
102  
25,002  
PKG NO.  
200  
SHEET  
8  
OF 12

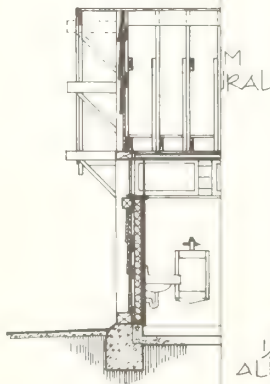
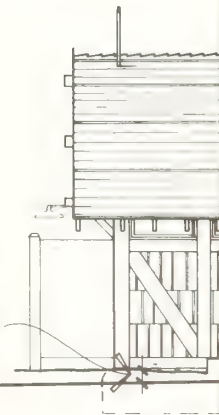




### GENERAL TREATMENTS

- (1) REPLACE ELECTRICAL WIRING AND INSTALL NEW INCANDESCENT LIGHTING AND OUTLETS W/GFCI's
- (2) INSTALL FIRE DETECTION/ALARMING SYSTEM w/ REMOTE NOTIFICATION CAPABILITY 2 FIRE STATION, RANGER RESIDENCE, ETC.
- (3) REPLACE PLUMBING PIPING AND TOILET FIXTURES. DUPLICATE NUMBER AND LAYOUT OF EXISTING. NO HOT WATER TO BE PROVIDED

REGRADE - LOWER GRADE TO MINIMUM 6" BELOW BOTTOM OF WALL SILL BEAM



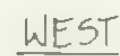
SCALE  
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ALL DRAWINGS

0 1 2 4 8 16 FT.

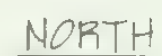
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DRAWN BY C. FRAZIER C. KENNEL			PKG. NO. 9
TECH. REVIEW G. HIGGINS			SHEET OF 12
DATE 3/88			

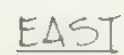




— REPLACE WORK ANGLE R P N  
INSTALL W E ERT F P N  
PUBER PAINT GREEN



BE A MALE WINGED MAN WITH A MIF RM  
+ A TIR, APPEARING THERE, HAVE  
DIFFERENT, A MALE, A MALE, A MALE  
MALE, A MALE, A MALE, A MALE, A MALE



RE-STATE LOWER  
CHARGE TO MINIMUM  
6" F.E. ON BOTTOM  
F. WALL - ALL BEAM

REPAIR ROOF & THRESHOLD  
AIR WEATHERSTRIP -

REVIEW OF ELECTRICAL INTERFERENCE  
PANELS AND MACHINERY  
RELATE TO INTERFERENCE  
IN THE FIELD OF NECESSARY

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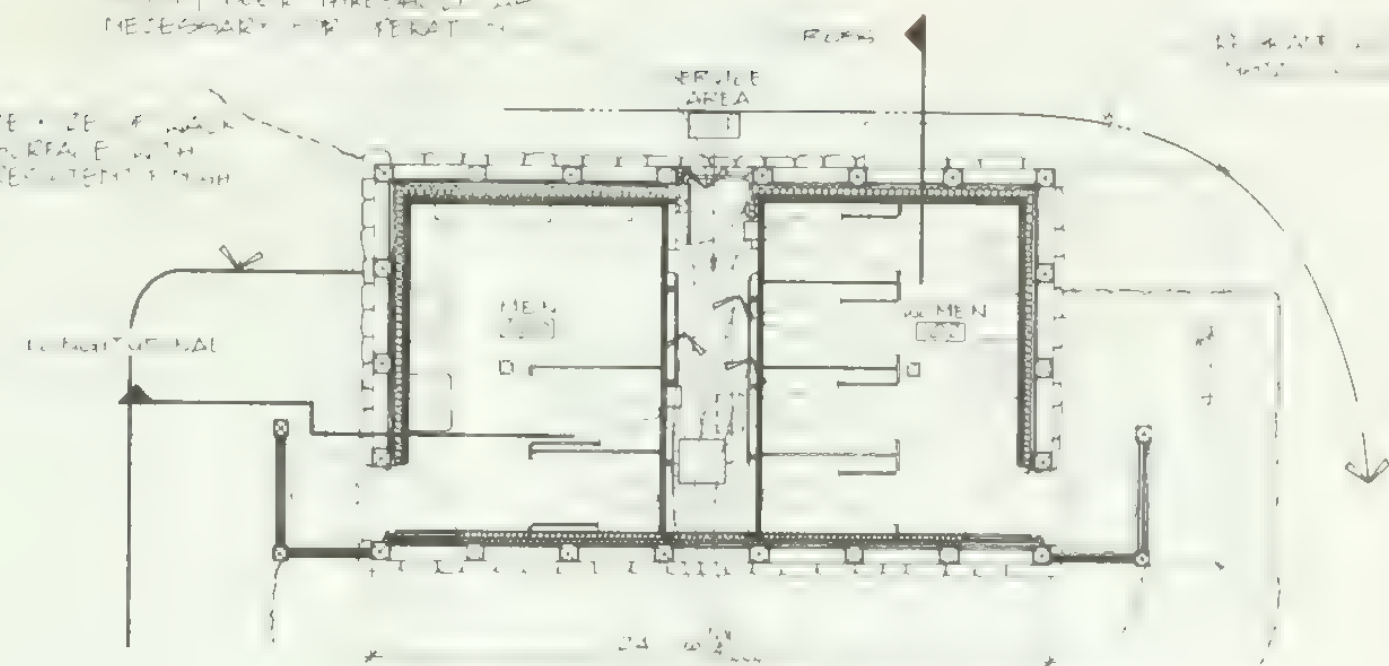


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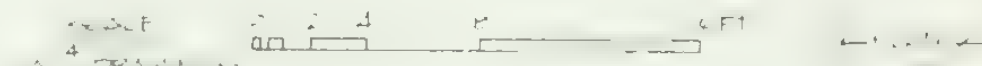
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FLOOR PLAN

## GENERAL TREATMENTS

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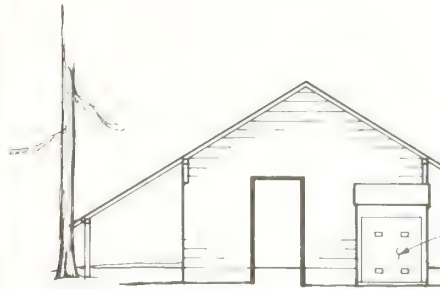
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TECH. REVIEW	DATE		PKG NO SHEET 9 OF



# GARAGE TREATMENTS

- INSTALL GFCI'S @  
A/C OUTLETS
- REROOF AND REPAINT
- MAINTAIN AS PER HSPG

\* REPLACE UNDERGROUND  
HEATER FUEL TANK  
NEW TANK IN UNKNOWN  
LOCATION



STORM SASH  
STORAGE CLOSET

NORTH

GE

ST

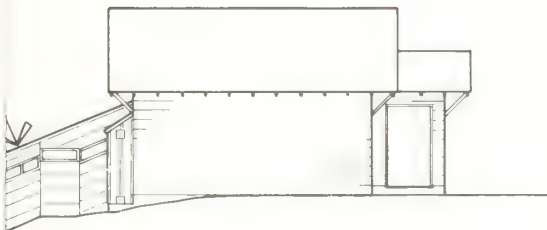
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RESIDENCE

REPAIR GR  
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GARAGE

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DESIGNED  
C FRAZIER  
C KENKEL  
DRAWN  
C KENKEL, GCF  
S. MOORE  
TECH. REVIEW  
G HIGGINS  
DATE 3/88

SUB SHEET NO

TITLE OF SHEET

RANGER RESIDENCE/GARAGE  
SITE PLAN, ELEVATIONS  
TREATMENTS

DRAWING NO

102  
25,002

PKG NO.

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SHEET

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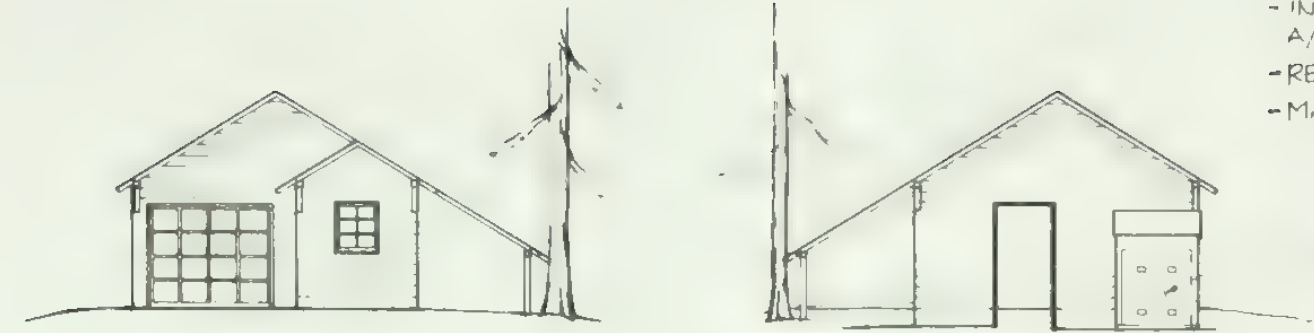
OF 12



# GARAGE TREATMENTS

- INSTALL GFCI'S @ A/C OUTLETS
- REROOF AND REPAINT
- MAINTAIN AS PER HSR

STORM WATER STORAGE CLOSET



SOUTH

NORTH

GARAGE



GARAGE

RESIDENCE

EAST

INSTALL FUTURE SNOW TUNNEL AS PER COMPATABILITY GUIDE LINES IN HSR

SNOW TUNNEL

GARAGE

RESIDENCE

WEST

\* REPLACE UNDERGROUND HEATER FUEL TANK WITH NEW TANK IN UNOBTRUSIVE LOCATION

DRIVEWAY

GARAGE

STONE WALLS & STEPS

CONC PATIO

REBUILD RETAINING WALL AND REGRADE IMMEDIATE SITE AND INSTALL SWALE FOR POSITIVE SURFACE WATER DRAINAGE

COLLAPSED RETAINING WALL

REGRADE & INSTALL SWALE - REPAIR DOWNSPOUT

REPAIR GATE AND FENCE

RESIDENCE

TWIN SLOPE 11' W

ASPHALT WALK W/ WOODEN STEPS

RESTORE WALK

SITE

SCALE 0 2 4 8 16 32 FT  
ALL DRAWINGS

PLAN & TRUE

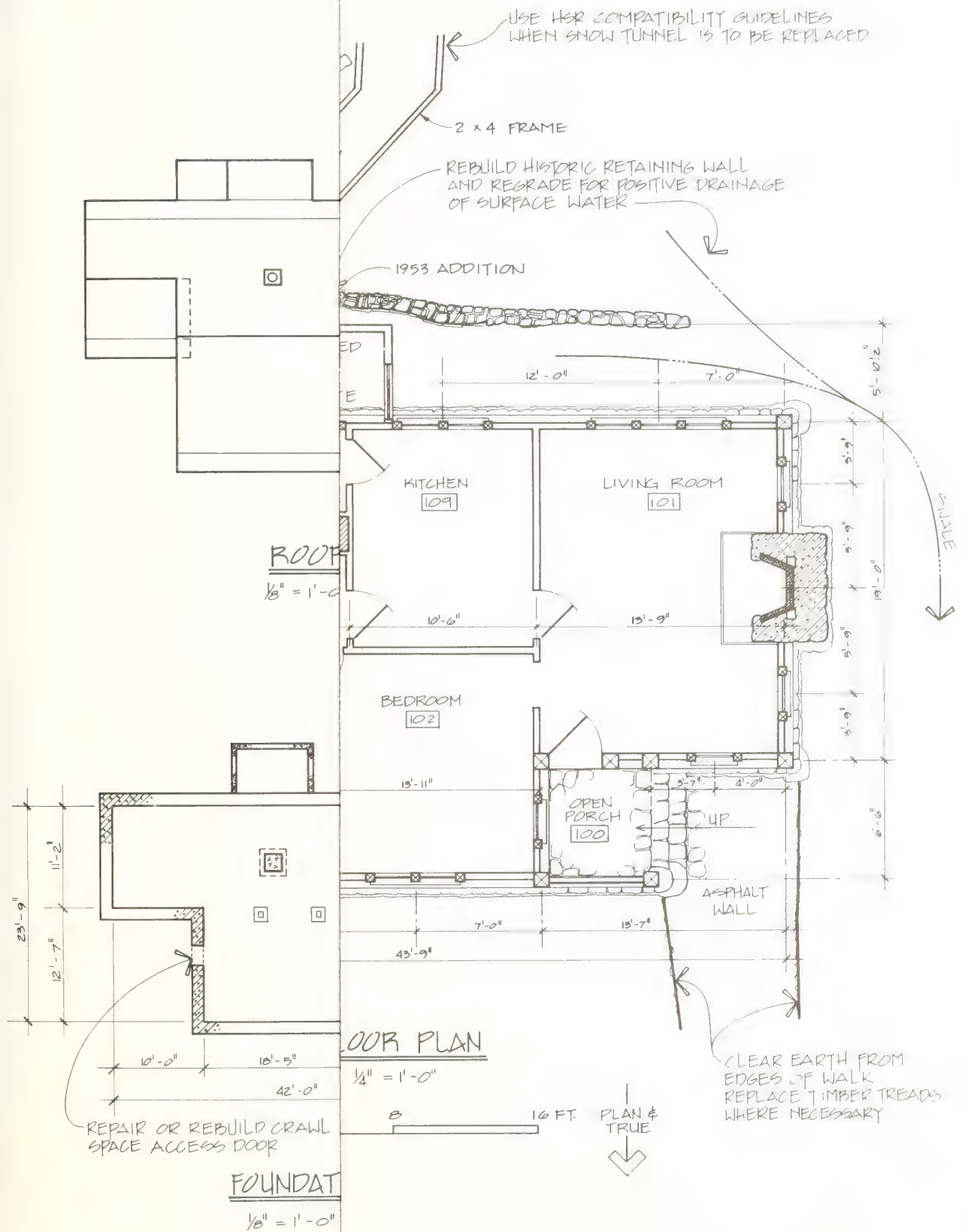
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C. FRACER  
C. KENNEL  
DRAWN  
C. KENNEL  
TECH. REVIEW  
G. H. GINS  
DATE 3/00

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TITLE OF SHEET  
RANGER RESIDENCE/GARAGE  
SITE PLAN, ELEVATIONS  
TREATMENTS

DRAWING NO.  
102  
25,002  
PKG NO.  
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SCALE  
1/8" = 1'-0"

0 2 4 8

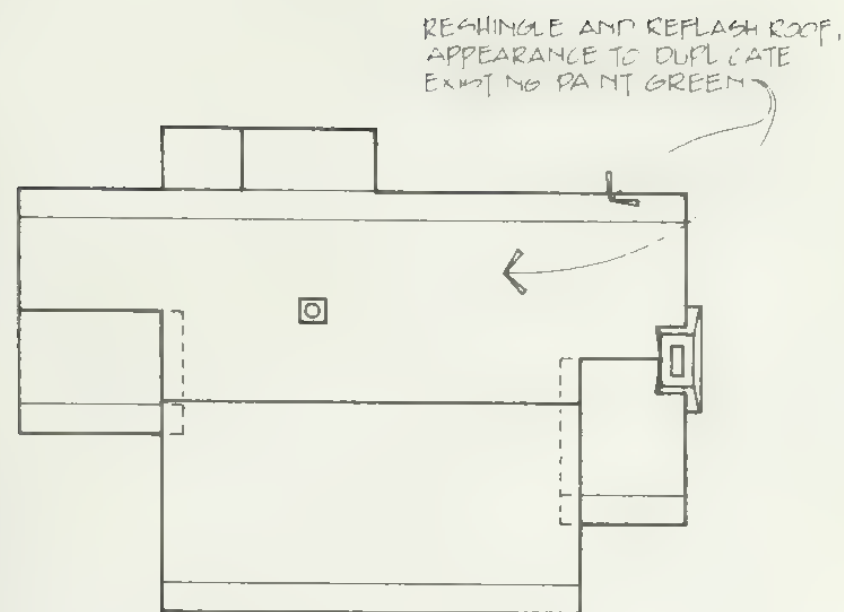
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C. FRAZIER  
C. KENKEL  
DRAWN - SM  
C. FRAZIER  
C. KENKEL  
TECH. REVIEW  
G. HIGGINS  
DATE 2/08

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TITLE OF SHEET  
**RANGER RESIDENCE  
PLANS & DETAIL  
TREATMENTS**

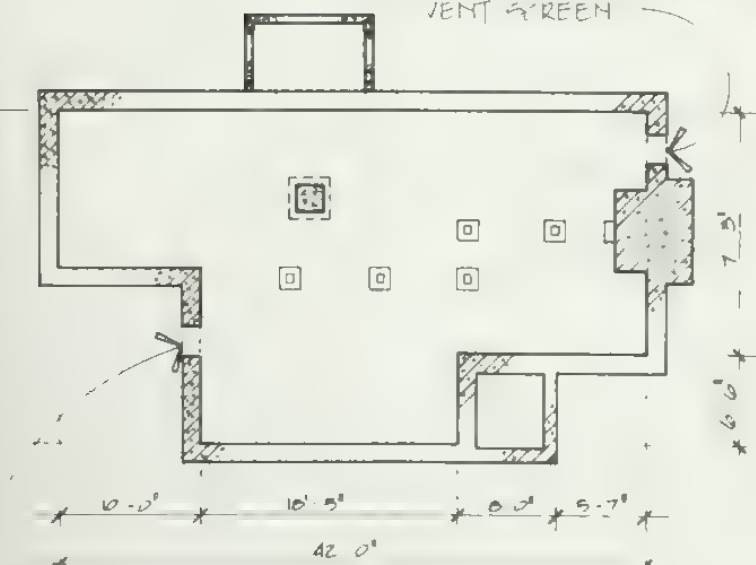
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25,002  
PKG. NO.  
2002  
SHEET  
11  
OF 12





**ROOF**  
1/8" = 1'-0"

REMOVE DEBRIS PICKING CRAWL SPACE VENT AND REPAIR OR REBUILD VENT SCREEN



**FOUNDATION**  
1/8" = 1'-0"

SCALE 1/8" = 1'-0" 0 2 4 8 16 32 FT

WALL PROFILE AT EAVE

WALL PROFILE AT GABLE

TYPICAL WALL PROFILE

**WALL PROFILE**  
1/4" = 1'-0"

SHARD & BATTEN

SHALE

1" C LINCHON

ASPHALT

REPAIR STONE FOUNDATION MAINTAIN DEEP RAKE

LOCAL GRANITE FOUNDATION

CONCRETE PATIO

REGRADE FOR POSITIVE DRAINAGE OF SURFACE WATER & RAIN WATER FROM DOWNSPOUT OR EMPTY DOWNSPOUT INTO UNDERGROUND DRAINAGE LINE

2 x 4 FRAME

REBUILD HISTORIC RETAINING WALL AND REGRADE FOR POSITIVE DRAINAGE OF SURFACE WATER

USE H&R COMPATIBILITY GUIDE WHEN NEW TUNNEL IS TO BE REPLACED

1953 ADDITION

ENCLOSED PORCH 10 SEE NOTE

BEDROOM 09

SERVICE ROOM 08

KITCHEN 09

LIVING ROOM 01

HALL 106

BATH 104

BEDROOM 102

LOSET 103

OPEN PORCH 100

ASPHALT WALL

**NOTE**  
SERVICE ROOM, 1953-54, TO REMAIN

**FLOOR PLAN**  
1/4" = 1'-0"

SCALE 1/4" = 1'-0" 0 2 4 8 16 FT PLAN & TRUE

LEAK EARTH FROM EDGES OF WALK REPAIR & TREAT WHERE NECESSARY

DESIGNED FRAZIER KENNEL	SUB SHEET NO.	TITLE OF SHEET RANGER RESIDENCE PLANS & DETAIL TREATMENTS	DRAWING NO. 102 25,002
DRAWN BY FRAZIER KENNEL			PKG NO. 25,002
TECH REVIEW			SHEET 11
DATE 7/00			OF 12



REPOINT CHIMNEY  
AND FOUNDATION  
MAINTAIN 1" DEEP RAKE

RESTORE  
WALK

REPLACE THE GUTTER/DOWNSPOUT  
SYSTEM, DOWNSPOUT TO EMPTY  
INTO A SPLASH OR AN UNDER-  
GROUND DRAINAGE LINE

1953 ADDITION

REPAIR GATE  
AND FENCE

BOARD AND-BATTON  
AT GABLE ENDS

LAP SIDING  
(1/2" EXPOSURE)

REPAIR OR REBUILD CRAWL  
SPACE ACCESS DOOR

FENCE  
LOCATION

DESIGNED  
C. FRAZIER  
C. KENKEL  
DRAWN  
C. KENKEL  
C. FRAZIER  
TECH. REVIEW  
G. HIGGINS  
DATE  
3/88

SUB SHEET NO.

TITLE OF SHEET

RANGER RESIDENCE  
ELEVATIONS  
TREATMENTS

DRAWING NO.

102  
25,002

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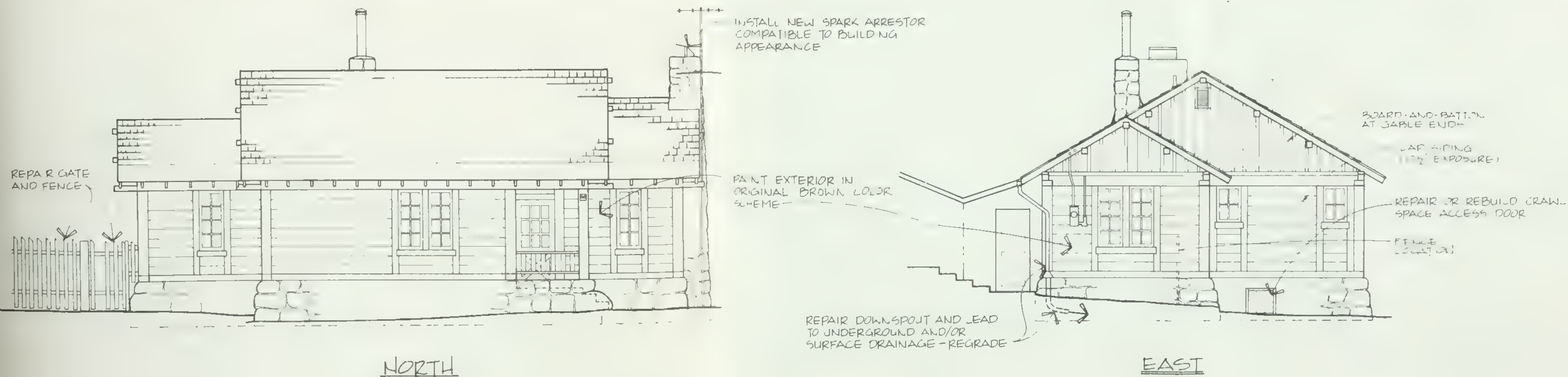
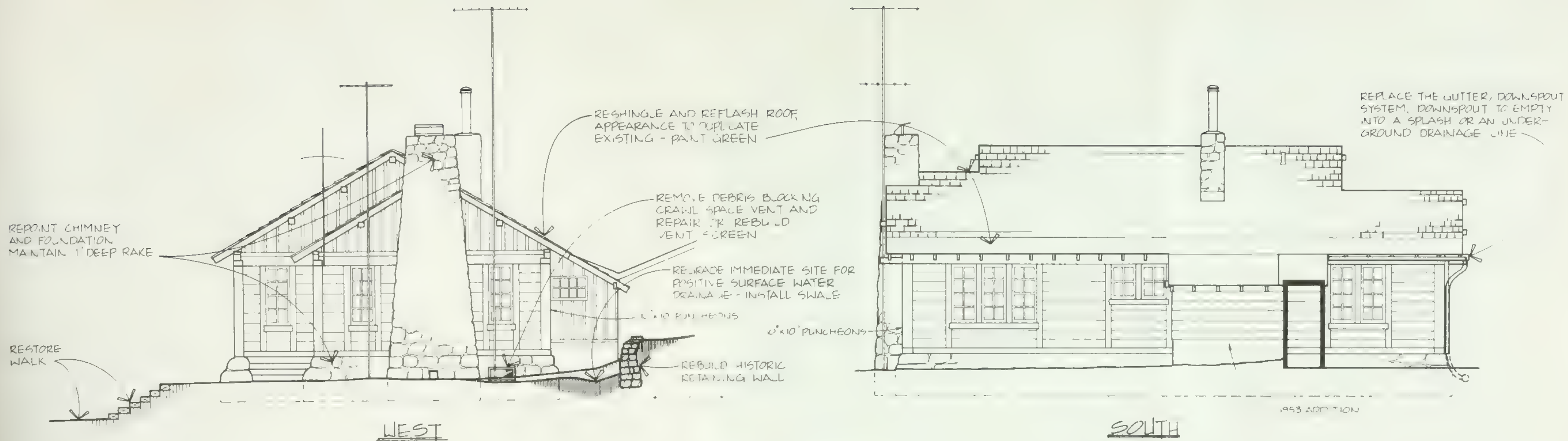
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OF 12





### GENERAL TREATMENTS

- REPLACE AND INSULATE CRAWLSPACE PLUMBING
- INSTALL FIRE DETECTION/ALARM SYSTEM WITH REMOTE NOTIFICATION CAPABILITY
- INSTALL GFCI's AT BATHROOM AND KITCHEN ALL OUTLETS

SCALE 0 1 2 4 8 16 FT

DESIGNED  
C. FRAZIER  
C. KENKEL  
DRAWN  
C. KENKEL  
C. FRAZIER  
TECH. REVIEW  
G. HIGGINS  
DATE 3/00

SUB SHEET NO.  
102

TITLE OF SHEET  
**RANGER RESIDENCE  
ELEVATIONS  
TREATMENTS**

DRAWING NO.  
102  
PKG. NO.  
12  
SHEET  
OF 12



## COST ESTIMATE

### COST SUMMARY

Table 5: Cost Summary in \$000s

	<u>Market</u>	<u>Comfort Station</u>	<u>Ranger Residence</u>	<u>Total</u>
1. General Condition	-	-	-	25
2. Demolition	19	5	-	24
Sitework	14.5	2	4.5	21
Landscape	Await recommendations from Area Study			
3. Concrete Work	8	-	1	9
4. Masonry Work	33	-	5	38
5. Metal Work	3	-	-	3
6. Wood				
- Rough	39	2	.5	41.5
- Finish	33	6	1	40
7. Thermal/Moisture	52.5	9	16.5*	78
8. Doors/Windows	24	7.5	.5	32
9. Finishes	38	6	13*	57
10. Specialities	5	1	1	7
11 & 12. Architectural Equipment and Furnishings	Await design development			
13 & 14. Not used				
15. Mechanical	36	5.5	8	49.5
- Exterior service	Await recommendations from Area Study			
16. Electrical	38	6	5*	49
- Exterior service	Await recommendations from Area Study			
Construction total (1988)	<u>343</u>	<u>50</u>	<u>56*</u>	<u>449</u>
Markups:				
Location factor 15%	51	8	8	67
Est. conteng. 10%	34	5	6	45
Subtotal	<u>428</u>	<u>63</u>	<u>70</u>	<u>561</u>
Overhead/Profit 30%	128	19	21	168
Contract total	<u>556</u>	<u>82</u>	<u>91</u>	<u>729</u>
Escalation to FY 94 30%	<u>167</u>	<u>25</u>	<u>27</u>	<u>219</u>
Total Contact (FY 94)	723	107	118	948

---

\*Includes garage work totalling \$10,500.



## COST BREAKDOWN FOR SCOPE OF TREATMENTS

### Division 1: General Provisions

Add costs for extra submittals, shop drawings, tests, demolition precautions; add for extra temporary controls and field operations facilities; add for extra cleaning and specific cleaning of market and ranger residence chimneys. These additional costs are factored into estimates below.

### Division 2: Demolition & Site Work

Market site - remove tree (\$800); remove walk paving (1800 sq. ft.), wood porch (80 sq. ft.), concrete pads (70 sq. ft.), log curb (10 ft.), cuts in stone curb (\$2.2k);

Interior market - remove and salvage 350 sq. ft. flooring (\$500), remove concrete floor areas (7 at 2' x 2' x 4") for roof support footings (\$500), remove and salvage wall paneling (4100 sq. ft.) plus furring and nailers (\$6k), remove partitions and salvage paneling (\$500), remove bar area and salvage bar counter top(s) (\$2k), remove fiberboard (2400 sq. ft.) from attic (\$500), remove electrical systems (\$4k), remove mechanical systems (\$2k);

Interior comfort station - remove 750 sq. ft. formica paneling (\$500), remove and salvage 750 sq. ft. wall paneling (\$1.5k), remove stalls, 13 fixtures and piping (\$2k), remove telephone panels, electric meters/masthead (\$1k).

Total demolition \$24k.

Market site - excavation (65 cu. yd.) and grading (east and south) and expose crawl space vents (at west), install swale(s) and gravel splash (\$3k); excavate some earth from crawl space (\$1k); install drainage



system, drop inlets, vent wells (\$4k); repair and place additional stone curbing and new curb cut (\$2.5k);

Comfort station - site grading, recontour area south and east (\$1k); install stone curbing and new railing at comfort station walk (\$2k);

Ranger residence - grading and excavation for swales and for rehabilitation of stone retaining wall (\$1k);

Install 270 sq. yd. new walks at market (west and south) (\$6k);

Comfort station walks (\$2k); rehabilitate walk at ranger residence (\$5k).

Total site work \$21k.

Note: Additional landscape work--not included here--could include additional drains and culverts; site restoration after structure removal and utility systems replacement and/or electrical system placed underground; various valve pits, transformer pads, log and/or stone curbing; additional trails/walkways, parking, roads, area lighting, top soil/seeding/fertilizing/mulching, sprigging, planting, landscape maintenance, and landscape furnishings including information "pods", waysides, etc.

### Division 3: Concrete Work

Market - install footing for retaining wall (150 ft.), surface repairs to addition foundation wall, and install footings for 7 new roof supporting posts (2' x 2' x 1') (\$8k);

Ranger residence - install footing for stone retaining wall (\$1k).

Total concrete work \$9k.



#### Division 4: Masonry Work

Market - install (70 cu. yd.) stone retaining wall (\$32.5k); repoint stone chimney (\$.5k);

Ranger residence - repoint foundation and chimneys and rebuild stone retaining wall (20 feet long) at (\$5k).

Total masonry work \$38k.

#### Division 5: Metal Work

Market - Install seismic reinforcing clips at roof and install chimney lining (\$3k).

Total metal work \$3k.

#### Division 6: Wood

Market - rough carpentry to include repairs and replacements of floor system joists ( $\pm 10$ ), beams ( $\pm 6$ ), subflooring ( $\pm 200$  sq. ft.), puncheon posts (2), sill beams (10 ft.), exterior wall holes, insect treatment, use of pressure treated material out-of-sight (\$7k); install post supported glue laminated beam at shed roof, new rafters, rafter bracing, plywood gussets and plywood attic "flooring" (\$16k); new wooden steps, ramp and 'porch' at west entries and new entry 'bridge' at loading doors on east (\$5k);

Rafter and sheathing repairs/replacements at market, comfort station and ranger residence as part of reroofing (\$3k);

Market and comfort station - install furring framing and nailers for new wall systems (\$10.5k);



Total rough wood work \$41.5k.

Market - finish carpentry would include build new partitions and install salvaged and new knotty pine paneling on walls and ceilings (\$15k), install crawl space access scuttle, patching attic soffit hole and miscellaneous wood repairs (\$2k), install new interior ceiling vents, attic louvers and miscellaneous millwork, window trim modifications, cabinets, base, crown molding and tile/Marlite in toilet and sink areas (\$16k);

Comfort station - finish work would include reusing some T&G paneling (\$2k), new wooden stalls (\$2k), attic scuttle and vent louvers, quarry tile base, miscellaneous millwork, window trim modifications and repairs (\$3k);

Ranger residence - crawl space vent door and windows would be rebuilt and fence repairs conducted (\$1k).

Total finish carpentry \$40k.

#### Division 7: Thermal and Moisture System

Membrane waterproofing systems or dampproof coatings would be installed on the existing rear foundation walls of the market in the market crawlspace and at all exterior walls of the market and comfort station (\$6k);

Insulation would be placed in all exterior walls and in the attic of the market and comfort station and on crawl space plumbing at the market and ranger residence (\$17k); existing roofs would be removed and new wooden shingles and roll roofing on sheds (shakes at the market) installed at all 3 buildings (±60 squares of shingles and 15 sq. roll) including all new flashings (\$45k);



Some gutters and downspouts would be installed/replaced at the market and ranger residence (\$2k); and sealants, caulk and weatherstripping used in wall skins, doors and windows of the market and comfort station (\$3k).

Thermal and moisture system work total \$78k.

#### Division 8: Doors and Windows

Repairs, partial replacement and general rehabilitation of doors, windows and existing hardware would be done at the market and comfort station (\$10k); some new doors and panic hardware would be installed at the market (\$4k);

New storm sash would be made for the market and comfort station (\$16k); and crawl space vent doors/screens/ventilation registers (\$2k).

Total door and window work \$32k.

#### Division 9: Finishes

Gypsum drywall would be used throughout in the market and comfort station as a fire stop layer and as the new finish walls in parts of the market (\$8k);

Marlite (or similar) would be used in the market and comfort station toilet and sink areas (\$4k); resilient flooring would be placed in the market toilet room and at sink areas and some carpet would be used at entries and circulation paths (\$2k);

The market additions' concrete floor (1260 sq. ft.) would be resurfaced (\$7k);



Exteriors of all four buildings would be repainted including roofs and interiors at the market and comfort station and including varnish work on paneling (\$35k).

Total finish work \$57k.

#### Division 10: Specialties

Special equipment would include toilet facility accessories at the market and comfort station (\$3k); fire fighting equipment (extinguishers, hose racks) at all 3 buildings (\$3k); and chimney spark arrestors with rain guards at the market and ranger residence and install flue lining with damper at the market (\$1k).

Total specialties \$7k.

#### Division 11: Architectural Equipment; Division 12: Furnishings; Division 13: Special Construction; and Division 14: Conveying Systems

There is no work in divisions 13 or 14. There will be a need for furnishings and additional specialized architectural equipment (kitchen appliances, etc.). The HSR does not include the level of detail to cover this work. In the design development phase, input regarding these matters will be necessary from HFC exhibit designers and concession operations.

No cost estimate is given here.

#### Division 15: Mechanical

The market and comfort station would be entirely replumbed (water and waste piping to new fixtures) while only the crawl space piping at the ranger residence would be replaced (\$13k); two water heaters would go into the market (\$2k);



A new heating plant (possibly a propane or an oil fired boiler with perimeter baseboard radiators or a dual system including forced air distribution) would be installed in the market and the ducting in the comfort station would be repaired or replaced (\$25.5k); mechanical ventilation units would go in the market attic and crawl space and two units in the comfort station attic (\$4k); the existing fuel tank at the ranger residence would be replaced (\$5k).

Total mechanical work \$49.5k.

Note: Civil engineering decisions concerning continued use of existing underground water, propane gas and sewage system services have not been made. The cost of rehabilitating these services is not included here.

#### Division 16: Electrical

The market and comfort station would be rewired (some conduit in the market might be reused) including new panel boards, new electric outlets, and GFCIs which would also be installed in the ranger residence bathroom, kitchen, garage and at the comfort station (\$15k);

Except for the reuse of several electrified gas light fixtures, all new incandescent lighting would be placed in both the market and comfort station including specialized exhibit lighting in the market visitor area (\$9k);

Fire detection with local and remote alarm systems would go into all 3 buildings (\$25k).

Total electrical \$49k.

Note: Civil engineering decisions concerning (re)placement of electrical services underground have not been made and cost estimates for this work are not included here.



## ASSESSMENT OF EFFECT

In the judgment of the authors, there will be an effect on the subject historic structures as a result of the proposed undertaking; however, that effect will not be adverse. There are two broad aspects upon which this assessment is based.

The recommended treatment strategy would result in the preservation and continued occupation of the three buildings while all other companion structures in the two historic districts are scheduled for removal. Continued use of the buildings after their repair would help to assure their proper maintenance, provide the opportunity for their interpretation, and generally perpetuate and conserve a historic scene for the benefit and enjoyment of park visitors.

The scope of work proposed is designed with a maximum respect for remaining historic fabric, for historic appearances and would leave the integrity of the exterior of the structures unimpaired, a stipulation cited in the DCP (1980) and iterated in the Memorandum of Agreement (1978). To assure the proper execution of the treatments and ongoing use of the buildings, the following cultural resource management requisites--taken from NPS-28--are applicable:

1. historic structure construction contract documents shall be prepared for this undertaking that are (a) based on the recommended scope of work presented in the historic structure report (HSR) as approved by the regional director and (b) these drawings and specifications shall be prepared under the direction of a historical architect, and shall comply with NPS policy and regulations (see "Compliance with Regulations" section above);
2. the proposed project shall be submitted for review using the Form XXX by the regional cultural resource specialists and other professionals (engineers, etc.) before implementation;



3. the construction work itself shall be performed under the direction of a historical architect or preservation specialist or under the supervision of a qualified technician in consultation with a historical architect;
4. where ground disturbance as a result of construction is anticipated to extend beyond the limits of that area "cleared" by archeological survey, additional archeological clearance and monitoring will be required;
5. upon completion of the project, the structures shall be maintained by qualified technicians in accordance with an approved historic structure preservation guide (HSPG). The HSPG should be prepared on a time schedule to be ready for implementation at the close out of the construction effort and shall address specific issues identified in the HSR; and
6. the use of a portion of the market building under a concession agreement, cooperative agreement, or the NPS historic property leasing program is appropriate. Such agreement(s) shall be entered into as stipulated by currently governing regulations (e.g., NPS-36, CFR 18, NPS-28, and chapter V of the "Management Policies").

These six requisites are identified as specific mitigation for the impact on the historic buildings and their surroundings. The impacts include removal of both historic and nonhistoric materials in order to accomplish repairs as well as to upgrade and modify the buildings to accommodate functions at today's standards. The result of these interventions will be evident on the building interiors while their exterior form, material, and historic style will be preserved and cultural values left unimpaired. During construction, additional precautions are cited under the following subsection.



## FUTURE CONSIDERATIONS

### RESEARCH POTENTIAL

There is very little architectural research potential in the three buildings because the construction technology of the buildings is not unique and very little of it is hidden from view. Historically there are several themes that could be explored in more depth, such as the oral histories of users and their lifestyle/occupation; the design process as originally undertaken by Underwood's office; or an architectural comparative analysis of NPS-Rustic at Sequoia National Park to similar styles at other parks.

### INTERPRETIVE POTENTIAL

Several interpretive approaches are possible. The most basic and simple would include a small sign or wayside at each structure on the trail system that identifies date of construction, architectural style/characteristics, National Register status, and statement of significance. A second level of interpretation could be accomplished in an exhibit setting where displays depict such subjects as (a) early Sequoia National Park development; (b) NPS-Rustic movement beginning with the 1918 design policy and including discussion of that philosophy in relationship to manner expressed in subject buildings; (c) early photographs of the historic structures; (d) story of rehabilitation/preservation project including construction photographs; (e) historical sketches of people/events with photographs of 1920s-30s activities and associated literature with Giant Forest village as a backdrop.



## CONSTRUCTION PRECAUTIONS

An aspect of mitigating the impact of the treatment project is cited in the "Assessment of Effect" section above: work is to be accomplished as per approved treatment scope. In particular, some specifications should be developed to specifically protect historic fabric/features and to perform some work with appropriate authenticity. Some of these precautions and protection procedures are listed below:

(a) a photographic documentation of the fractured concrete floor in the market should be undertaken as a matter of record prior to installation of the new coating, which will not be a reversible system;

(b) the historic wood shingle samples contained in the park archival collection and the extant roof below the sheet metal should be thoroughly studied prior to writing a reroofing specification to assure an authentic new roof installation regarding shingle size, wood species, paint color, exposure to weather, etc. (see Appendix G);

(c) interior wood boards and paneling and strip flooring should be removed with care and with the intention of salvaging for reinstallation in the market and comfort station and duplication for replacements should be based on actual samples;

(d) search for appropriate manufacturer to obtain historic duplicate glazing material compatible with comfort station original glazing;

(e) new storm sash or double glazing units should be designed for unobtrusive interior installation and where on the exterior be removable and reversible;

(f) door hardware should be selected for replacements that duplicate historic and new exit hardware units should be chosen that are



compatible with the size, scale, color, material, and character of the market;

(g) site work including new walks and retaining walls should be designed using stone and wood materials compatible with building character;

(h) documentation by field notes and photographs should accompany the construction project completion report to illustrate conditions prior to removal of material and building elements during demolition to show construction techniques as well as the "after" treatment product;

(i) electrical systems (including fire detection/warning equipment) and plumbing retrofit systems should be designed so as to avoid physical interventions such as cutting or removing historic material where possible and to have least visual intrusiveness on the historic scene;

(j) new market partitions should be built and finished with a color/material/texture compatible with historic precedent; e.g., using knotty pine tongue and groove and employing wainscot;

(k) new and replacement wooden elements should be of treated material when unexposed to view or in an unexposed location, otherwise material should match color and texture (including saw pattern, for example) of adjacent historic elements;

(l) paint color study should be conducted to determine most historically appropriate wall, roof, trim color scheme (see Appendix G);

(m) in the market rehabilitation, effort should be made to salvage and reuse historic features such as the bar, old gaslight fixtures, and antique signs in the lounge, and utilization of some existing



partitions should be incorporated in final functional layout (e.g., old east wall of market, partitions at north end of market); and

(n) new toilet partitions, door weatherstripping, and thresholds should be selected on basis of characteristics of historical compatability as well as functionality and durability.



## APPENDIXES







## APPENDIX A: FABRIC INVESTIGATION OF GIANT FOREST MARKET

by

Historical Architects Craig Frazier and Craig Kenkel,

Structural Engineer Richard Silva and

Exhibit Specialist (preservation) Bob Haile

### Background

In late October, 1986 a fabric investigation was conducted at the Giant Forest Market. The study involved removal of earth adjacent to the building and removal of floor and wall material inside the Fireside Lounge (room 100) of the building in order to reveal foundations, building crawl space, and floor and wall systems. Notes concerning this study are included in this appendix as a matter of record. Appendix B includes additional observations of this investigation as part of the structural engineer's report.

Archeological clearance for conducting the test excavations was provided by archeologist Scott Carpenter who observed "there are no archeological resources in the vicinity" (memorandum June 13, 1986).

A Form XXX was prepared to assess the effect of the investigation and sent by the project historical architects for regional cultural personnel certification (August 1986).

### Foundation Examination

Although no problems were suspected regarding the concrete foundations of the original portion of the market building, several deficient conditions had been observed on the inside concrete foundation walls of the 1938 addition. It was decided to conduct excavations adjacent to both foundations in order to provide a better understanding of their construction and, in particular, to answer questions regarding their



configuration, depth, condition, presence of moisture, and possible presence of a moisture barrier.

Five excavations were conducted and are shown on the floor plan of the market included here (figure A-1). Notes concerning each test pit follow.

A. Test pit 'A' was hand excavated at the southeast corner of the original portion of the market adjacent to the corner where the 6x8 wooden sill plate is severely rotted. Grade, prior to the excavation, was in contact with the wooden members and sloped toward the building creating an excessive moisture concentration. Digging was difficult because the soil was full of gravel after a 20-inch soil layer was removed. The dig was discontinued at a depth of 28 inches below the wooden plate because the research potential seemed of little benefit.

Observations: The concrete foundation continued below the depth of the excavation. The surface of the concrete was brittle and friable in its outer 1/4 inch. No cracks were observed. No moisture barrier was observed. (See Figure A-2, A-6, A-7, A-8 and A-9.)

B. Test pit 'B' was excavated by hand between the chimney and 1938 addition. Digging was again difficult because of the presence of roots and after 2 feet, because of the presence of a gravel layer (lense), which continued down to the footing. The dig was taken down along the stone chimney and at the center of the hole to reveal the bottom of the 1938 wall footing. A depth below former grade of nearly 5 feet was reached (figures A-3, A-10).

Observations: The foundation wall rises about 4'-10" in height above the footing lip. The wall is not battered. It is coated with a deteriorated bituminous layer, which is no longer effective as a moisture barrier. The wall is functioning as a retaining structure with about 30 inches of earth behind it. The retaining wall was built in 1938 as an extension of the addition structural system and was placed 8 inches in front of the original market rear wall. The wall has no fractures but its surface is friable.



The stone chimney continued deeper than the test excavation. Many roots have grown into mortar joints. There were no signs of fracture and the granite is in good condition.

C. Test pit 'C' was begun, again, by hand. However, it was decided to utilize a backhoe to complete this dig. The excavation was made adjacent to the south wall of the 1938 addition near its southeast corner. The digging occurred in two areas because of the presence of a gas line pipe: between the pipe and wall, the dig was discontinued at the top of the gravel lense; south of the pipe, the dig continued to a depth of over 5 feet.

Observations: The addition foundation/retaining wall in test pit 'C' was installed with a slight batter. The presence of a bituminous coating was confirmed and its condition is deteriorated beyond effectiveness. Although about 4 feet of earth is retained at this point, and the concrete wall is unsupported for a height of over 5 feet, there was no evidence of wall fracture. Again, however, its surface was a bit flakey. The presence of roots was excessive as in test pit 'B'. The wall continued to a depth below the dig. Its footing was not encountered.

The gravel lense occurred at a depth of about 3 feet, is about 16 inches wide and 8 inches thick. It is composed of both smooth river rock and sharp edged (crushed) granite (figures A-4 and A-10).

D. Test pit 'D' was excavated with a backhoe (2-foot shovel) at the rear (east) wall of the addition where that wall makes its first height step-down (i.e., about 25 feet north of the south corner). The dig was taken down over 5 feet--the final foot was excavated by hand.

Observations: The foundation/retaining wall is about 5 feet high (unsupported) at this location. It is battered about 2½ inches over its height. A bituminous coating is present but due to deterioration, no longer effective. The "footing" at this location was more like a concrete spill over, a lip demarking two lifts rather than a true spread footing.



The depth of the footing was not confirmed. No fractures or cracks were observed although nearly 4 feet of earth is being retained by the wall.

The gravel lense in this test pit appeared at a depth of about 3 feet. It was 6 to 8 inches thick and about 20 inches wide (figures A-5 and A-11).

E. Test pit 'E' was excavated with a backhoe at the rear (east side) wall of the addition where that wall steps down a second time (i.e., about 49 feet north of the south corner). The dig size and depth was virtually identical to test pit 'D' and the findings consistent.

Observations: identical to those of test pit 'D' (figure A-11).

#### Interior Examination

Two areas of the floor in room 100 were opened up for examination: (1) at the southeast corner where a plywood patch (2'-6" x 5') was present, and (2) at the west edge of the room where the strip flooring had been taken out and reinstalled and where the floor was insecure and springy. (See drawing of market plan, figure A-1). The investigations are documented by the following photographs (figures A-12 through A-18) as well as the wall sections in the previous illustrations (figures A-2 and A-3). The findings of the study are listed below:

1. Crawl space ventilation windows are present along both the south and west wall of the south wing of the market (below room 100); however, these vents are blocked by earth and the asphalt walk on the exterior.
2. The crawl space is too shallow along the south end of the market preventing effective air circulation and allowing some wooden floor structural members contact with damp earth.



3. Moisture barriers in the wooden wall and concrete foundation walls are ineffective or nonexistent.
4. There is no crawl space floor moisture barrier.
5. The resulting condition in the crawl space and wall cavity is one in which moisture is concentrating in wooden members--readings of 19% to 29% moisture content were found in floor joists, floor beams and lower wall members.
6. This condition encourages the development of rot and infestation by wood boring insects--both were found.
7. Repairs have been undertaken within the past 8 years, but these repairs were superficial--replaced some deteriorated material but did not address the cause of deterioration.

A treatment strategy should not only include replacement of rotten material and terminating the insect infestation, but should correct the physical deficiencies which encourage these agents of destruction.

We suspect the insect infestation is that of the powder-post beetle (Trogoxylon parallelopipedum) which live beneath the surface of wooden members for months eating their way through the wood. As a rule, they do not enter painted wood. It is therefore essential to (a) apply paint thoroughly including the undersides of members and areas not easily painted and (b) to seal cracks and gaps in exterior wooden skin systems to prevent insects having access to interior, unpainted members.

The crawl space of the market needs to be properly vented to assure air exchange, air circulation, and general drying. To achieve this, vent windows need to be opened up, properly screened and operable, and the crawl space itself needs to be deep enough to permit air movement and eliminate earth in contact with wooden members.

Finally, moisture barriers are recommended for both the floor of the crawl space and wall systems. The roofing felt system in the market walls is not entirely effective--it needs to be replaced.



Figure A-1. Drawing--Market Plan Showing Fabric Investigation Sites  
(10/86)



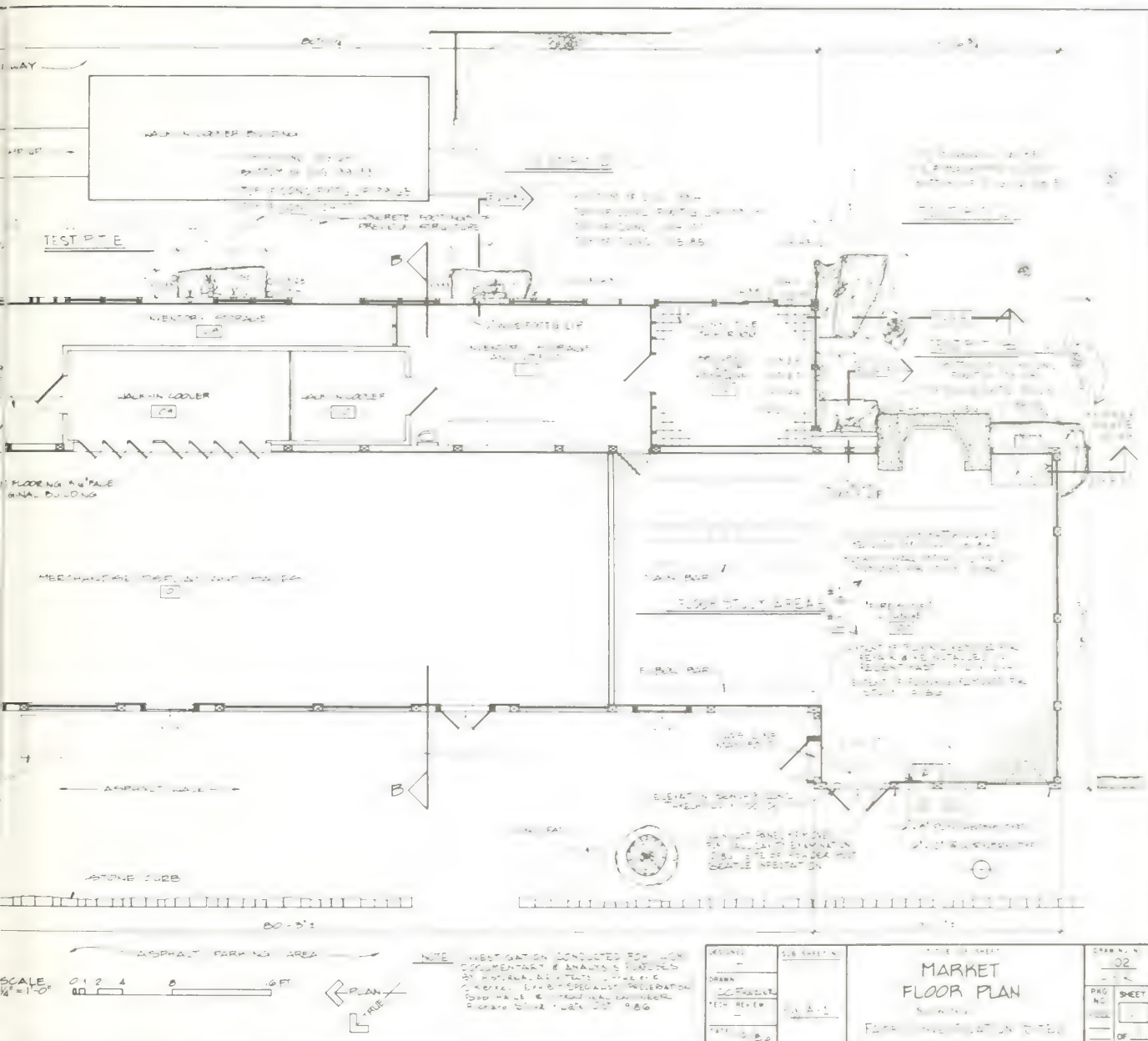
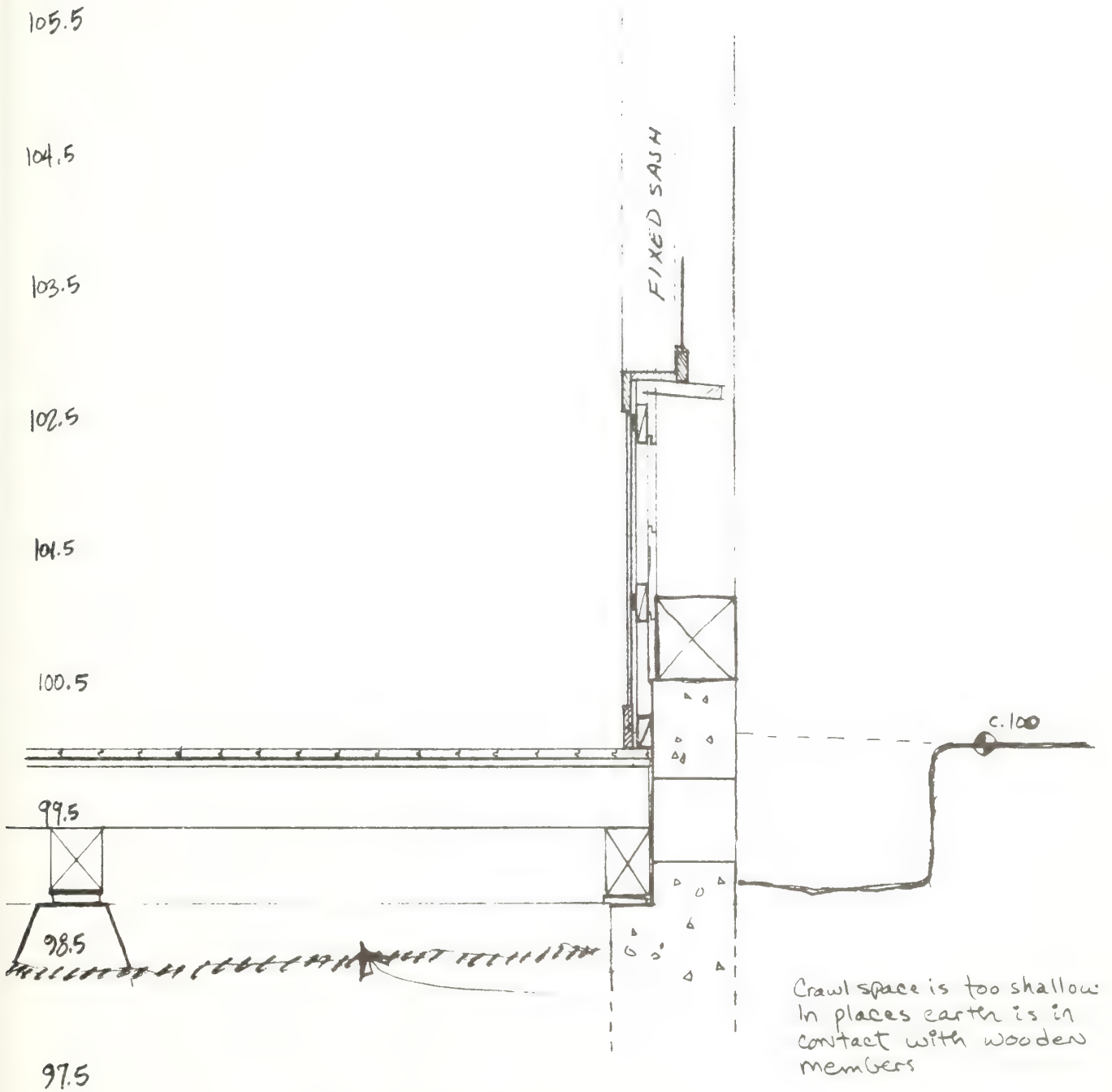




Figure. A-2. Section at Test Pit 'A'





(A/2) Test Pit A

3/13/85



Figure A-3. Section at Test Pit 'B'



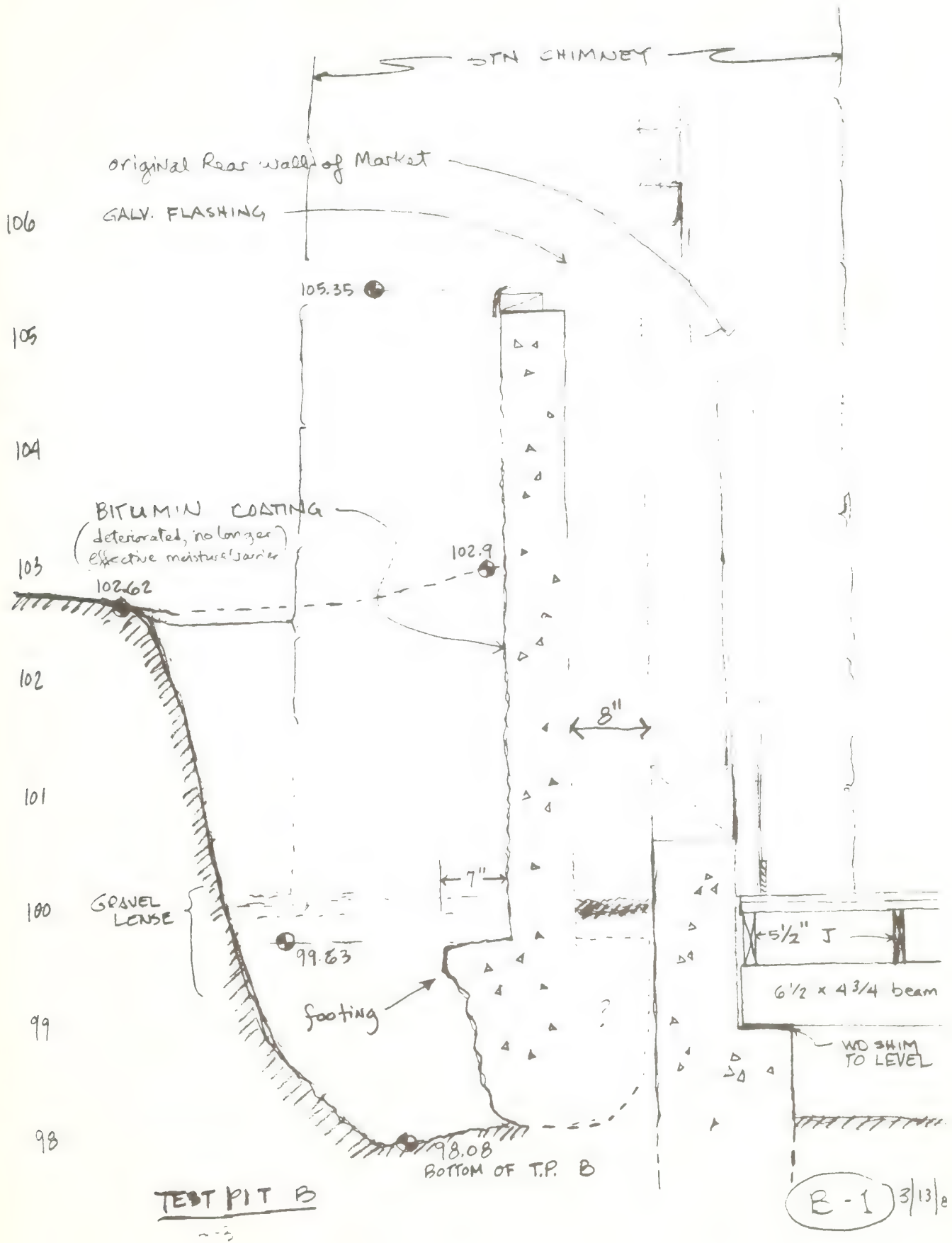
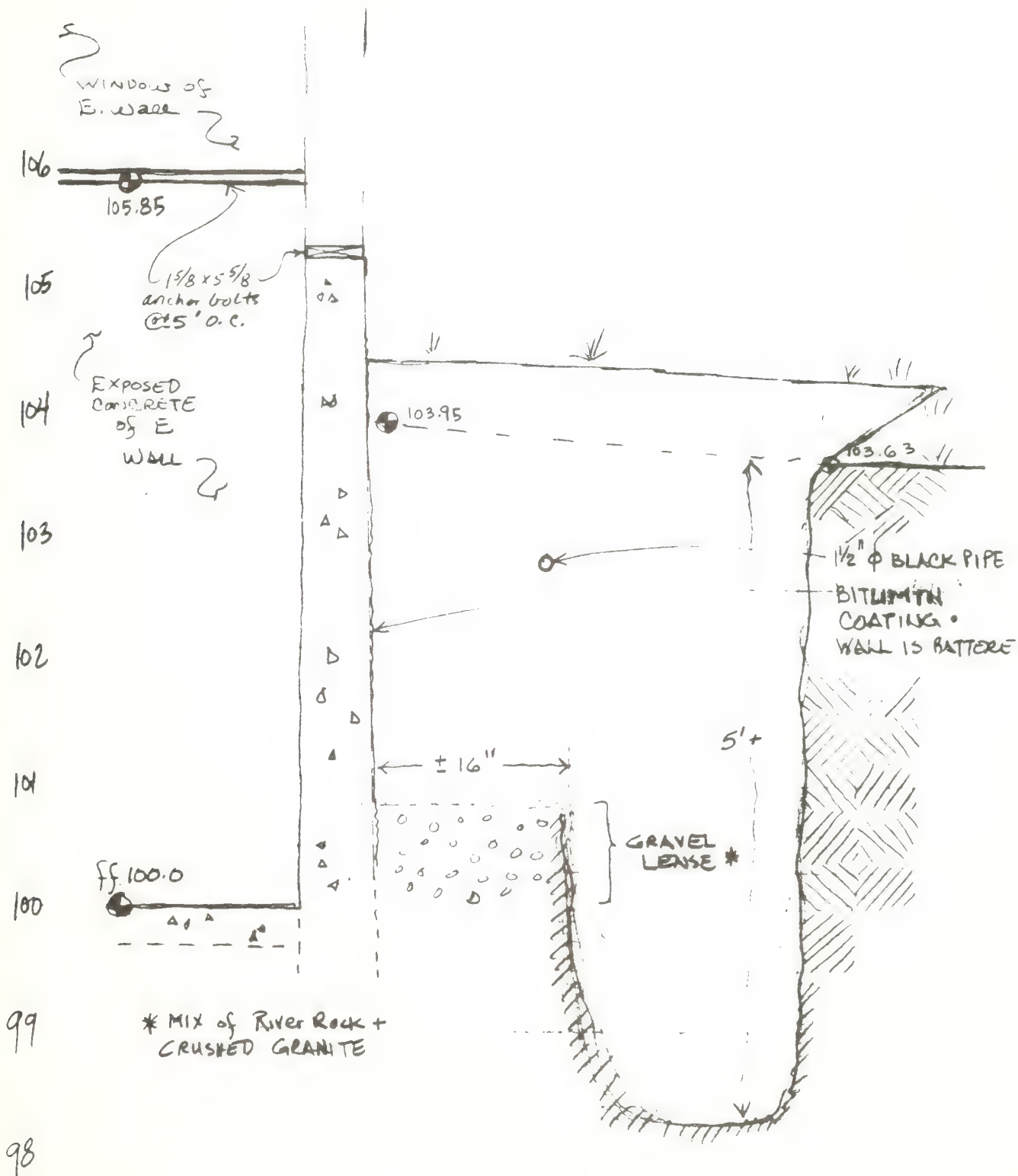




Figure A-4. Section at Test Pit 'C'





# SECTION @ TEST PIT C

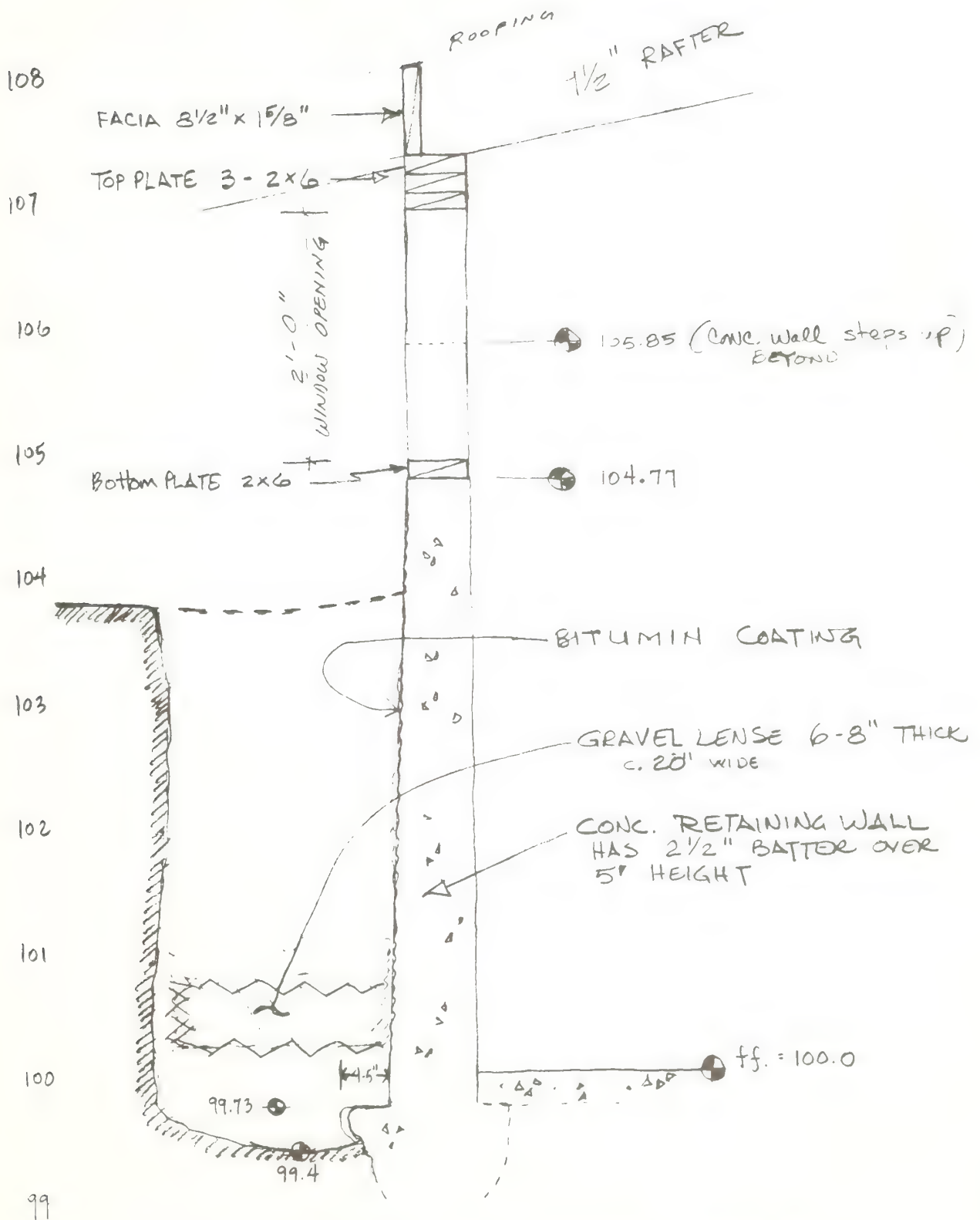
A-4

3/13/87



Figure A-5. Section at Test Pit 'D'





TEST PIT 'D' (NOTE TEST PIT 'E' SIMILAR)

A-5

3/13/87



Figure A-6. Market, Southeast Corner, Test Pit A (10/86). The site grade at this corner, prior to the dig, was in contact with the 6x8 sill beam--the resulting rot is seen in this view from the south. The gaps between wall shiplap panels, too, are a result of rot. This view was taken after removal of plywood from inside room 100.

Figure A-7. Market, South Wall at Sill (10/86). To the west of the southeast corner along the south wall of room 100, this view shows additional gaps between siding and sill beam--an access for insects and moisture.







Figures A-8 and A-9. Market at southeast corner, test pit A (10/86). The upper view shows the extent of the exploratory excavation. The hole goes down 28" below top of concrete (below sill beam) and extends from the southeast corner to the chimney. At right, the sill beam is rotted away as is clearer in the lower photograph. The plywood patch replaces several pieces of shiplap siding which rotted away and have been removed. The lower photograph also shows that the bottom of the corner puncheon has begun to be attacked by rot.







Figure A-10. Market, test pits B and C (10/86). The upper view shows the extent of excavation at the juncture between the east wall of the market, the 1930 chimney, at left, and the 1938 addition retaining wall, at right. At a depth of 5 feet was found the concrete footing, detail at bottom left. The photograph at bottom right shows test pit C at the southeast corner of the 1938 addition (with B at the upper right corner in the far ground). The addition wall is battered slightly to function as a retaining wall. It also was coated with a moisture barrier, but this is no longer effective. the 1½-inch gas line, visible in both test pits, comes from the main manifold on the west side of the market, up through the market attic and exits at this location where it goes to another building--it does not serve the market.



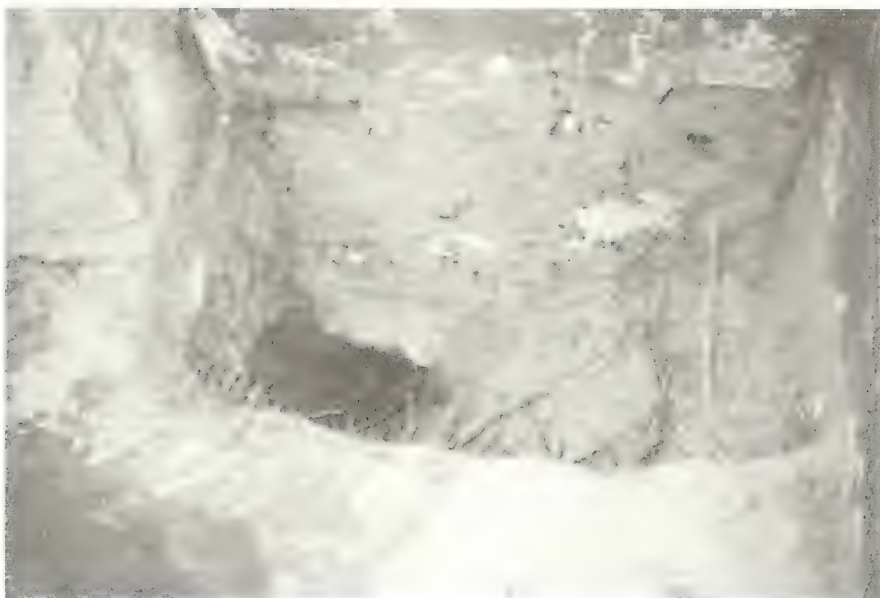




Figure A-11. Market, Test Pits D and E (10/86). These views show the extent of excavations along the east (rear) wall of the 1938 addition. Both of these holes are about 5-feet deep, both revealed the lip of the wall footing, confirmed the batter of the wall and its condition. The bitumin waterproof coating is consistently ineffective. Also, both pits included the 6-to-8-inch thick gravel drainage lense which helps establish the original grade and the depth of the proposed drainage excavation along the rear of the building.







Figure A-12. Market Interior Fabric Investigation at Southeast, Room 100 (10/86). Plywood patches, part of a repair job of the 1970s or early 1980s, were removed from both floor and wall at this corner adjacent to the fireplace. The repair was done to replace rotted material, but did not address the cause of the rot--excessive moisture. Besides rotted joists, subfloor, beams and wall paneling, also revealed by this exploration was the shallowness of the crawl space and the fact that several crawl space ventilation windows are entirely blocked by exterior soil build-up.







Figures A-13 and A-14. Market Crawl Space (5/86 and 10/86). The upper view shows the crawlspace as seen below the north end of the market where there is about 30 inches between the earth floor and the wooden subflooring. The lower view shows one of the 5 x 7 (6½" x 4-3/4" typically) floor beams vertically in contact with the earth. The end joist in the lower view is severely rotted and instrument readings indicated nearly 30% moisture content. Some of the crawl space earth should be excavated at the south end, several structural members must be replaced and the crawl space ventilation system needs to be improved.







Figures A-15 and A-16. Market Crawl Space Vents (10/86). The above view is from inside the crawl space at the south end of the market (below room 100). This vent window is entirely blocked by earth on the exterior and partially obscured by debris and floor joist on the interior. The lower view is from the exterior of a vent on the market west wall. Most vents are reduced in effective size by the floor structural system, so it is especially important to eliminate additional, avoidable blockages. Also of note in the upper photograph is the decayed and fractured joist and beam, the result of excessive moisture and lack of adequate ventilation.



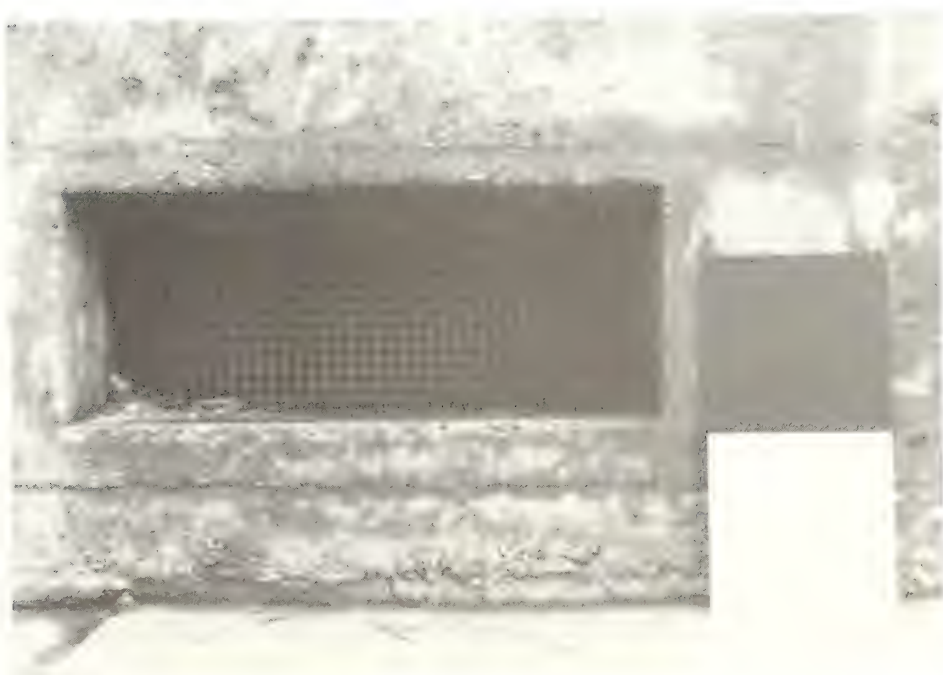




Figure A-17. Market Interior Fabric Investigation, West Side of Room 100 (10/86). A 27 x 19 inch section of flooring, which had been previously removed as part of a repair effort in the late 1970s or early 1980s, was taken up to reveal the nature of the "repair" and determine the extent of suspected deficiencies. Part of a joist and some subflooring had been replaced in the repair effort. Additional joists and subfloor are in need of similar treatment because of their advanced state of rot. The 1 x 4 base and a single wanescot panel were removed to reveal the cause of the deterioration. As in the investigation at the southeast corner, excessive moisture is the culprit--the crawl space is shallow, the vent window at this location is buried by the asphalt sidewalk outside, and the asphalt is used as a moisture barrier but traps moisture against the adjacent door threshold. See also next figure.







Figure A-18. Market Interior Investigation at West Wall of Room 100 (10/86). These views show the wall cavity within the wainscot adjacent to the area of flooring taken up. Roofing felt was employed by the builders on the inside face of the exterior shiplap siding and on the interior side of the wall panel nailers. The cavity between was found to be full of frass from wood boring insects. An examination of the frass revealed living larval-stage insects, i.e., an active infestation is present. An examination of the exterior side of the wall revealed locations of beetle egress at the ineptly painted underside of horizontal puncheon members.







## APPENDIX B: STRUCTURAL ENGINEERING REPORT

by

Structural Engineer Richard Silva, Western Team, Denver Service Center

### SUMMARY

#### Comfort Station

The comfort station structural systems were found to be adequate for current and future uses. No deficiencies were observed or reported. Future rehabilitation should address the deficient flooring in the mechanical space and the negative effects of the exterior grade in contact with the wooden sill.

#### Ranger Residence

The ranger residence and garage structural systems were found to be adequate for current and future uses. No deficiencies were identified or reported.

#### Market

The market building structural systems were found to be deficient in several respects:

1. The roof system is under structured for a wood shake roofing system and would require snow shoveling unless it is reinforced.
2. When reroofing is undertaken, spot locations of water damaged rafters and sheathing should be replaced.



3. Seismic-type connections are absent where the roof structural system joins the walls.
4. Excessive lateral earth pressure in conjunction with the negative site grading has deteriorated the rear foundation stem wall.
5. The concrete slab on grade in the rear of the building is deteriorated and cracked.
6. The timber framing at the southeast corner is rotten.
7. Floor and wall structural systems at the Fireside Lounge have extensive insect and moisture damage. The crawl space is inaccessible and has inadequate under-floor clearance and ventilation.

## DISCUSSION AND FINDINGS

### Comfort Station

The comfort station foundation, walls, and roof structure were all found to be in good condition (see figure 95). The structure and significant elements are intact, structurally sound, and performing their intended purpose. Calculations show the roof is capable of supporting an allowable total load of approximately 210 psf (see figure B-9, sheet 7-9). Reduction of snow load by shoveling has never been performed at this building according to the park staff. The total load capacity of 210 psf appears to be an adequate design load.

The mechanical chase floor was never completed. Rehabilitation of the wood plank flooring could include additional planking or replacement with a concrete slab on grade. The exterior grade around the southeast corner should be regraded to provide positive drainage away from the building and provide a 6-inch minimum clearance from grade to the wood



members to protect the wood from deterioration (see figure 66). See existing measured drawings (HABS) for documentary data.

### Ranger Residence

The ranger residence and garage foundation, floor system, walls and roof structure were all found to be in good condition (see figures B-1 & B-2). There was no evidence of cracks, permanent deflections, joint failure or displacement, connection breakdown, etc. The structure and significant elements need no repair. Calculations indicate the trusses are capable of supporting a total load of 135 psf (see figure B-9, sheet 10.11). According to the park staff no snow load reduction, by shoveling or any other method, was performed at this building and the resulting total load capacity of 135 psf appears to be adequate.

Repainting of the stonework is recommended to prevent moisture penetration. See existing measured drawings (HABS) for documentary data.

### Market

The condition of structural systems in the market building varied. Some elements need repair or replacement; some elements need additional structural system reinforcement and connection upgrading.

Roof System. The building is a one story building of timber post and beam construction. The roof has board sheathing spanning several different roof framing systems (see figure B-3). On the ends of the building the sheathing spans roof trusses at 24 inches on center. The trusses are made up of single wood members with nails at the joint connections and a  $\frac{1}{2}$  inch diameter bolt at the end joint connections. In the front portion of the building wood trusses are at 57 inches on center with 3" x 6" rafters alternating between the trusses at 57 inches on



center (see figure B-4). Again, the trusses are made of single wood members with nails at all the joint connections. The trusses and rafters have a continuous ridge beam at the peak and all the vertical and diagonal members are offset from the plane of the top and bottom chords with nailed connections; therefore, by definition are not "true" trusses, but more of a braced rafter and ridge beam system. In the rear portion of the building (1938 shed-roofed addition) the board sheathing is spanning 2x10 rafters at 14" on center (see figure B-7). The trusses and rafters are supported by 6x8 and 6x12 timber beams and posts. The tongue and groove finished floor of the main older part of the market is supported by 2x6 joists at 16 inches on center resting on 4x6 beams at 6 feet on center with concrete piers supporting the beams also at 6 feet on center (see figure B-7).

Calculations indicate the roof system is capable of supporting a total load of approximately 165 psf for the trusses (this would be achieved if 8 feet of snow accumulated), 69 psf (approximately 3 feet of snow) for the rafters between the trusses, and 146 psf (approximately 6 feet of snow) for the rafters at the rear portion (the shed-roofed addition) of the building (see figure B-9, sheet 1-6). The proposed treatment includes a return to the historical shake roof. The park staff reports that snow had to be shoveled from the roof prior to the existing 1975 metal roof. To prevent this maintenance burden the roof should be reinforced. It is recommended that the rafters between the trusses be braced similarly to the existing truss system and the rafters of the shed dormer. Also, it is recommended that 1/2-inch plywood gussets be installed at the joint connections. New rafters should be installed between existing rafters and truss system. Because the rafters in the rear portion of the building possess the potential to accumulate more snow, the rafters in the rear portion of the building should be braced by a wood beam and post system along the middle third of the span to increase the load carrying capacity by decreasing the span (see figure B-10).

During the period of 1960-1974 a maximum snowfall for one month of 187 inches was recorded (see B-11). (While 200 inches of annual snowfall is



normal, record snowpacks may occasionally exceed 200 inches on the ground according to park records.) With an average density of approximately 13 psf and assuming this level of accumulation on the roof, snow load may exceed 200 psf. This is slightly over the calculated maximum total load capacity of 185 psf, yet the roof shows no sign of being overstressed. Another point should be made concerning the engineering calculations: Douglas-Fir grade #2 or better is the assumed wood species although this may in fact be liberal since Douglas-Fir, is one of the stronger species of wood. However, because of the uncertainty of the wood species no snow load reduction due to the roof pitch was computed. Again, however, the roof members show no sign of overloading, the nailed connections are not displaced, and there is no permanent deflection of any of the roof members. With the above recommendations for bracing and additional rafters, the roof snow load capacity will be increased to 200 psf and shoveling to reduce the snow load will only be required if the accumulated wet snow level exceeds 10 feet on the gable or 15-feet on the shed roof for more than a month.

Roof leaks were throughout the building, but mostly in the rear. It is recommended that the leaks be repaired and the water damaged sheathing and rafters be replaced. The roof sheathing on the inside front corners of the building has pulled away from the hip rafters. It is recommended that damaged sheathing and rafters be replaced at the time of reroofing.

Seismic Reinforcement. The State of California and the Uniform Building Code require that buildings be brought up to code, including seismic bracing, when major rehabilitation work is done or when changes in use or occupancy create a greater life safety risk. The existing shiplap siding placed horizontally with tongue and groove boards placed vertically on wall members should provide adequate seismic bracing of walls for future use. Seismic-rated connections should be installed at the rafters and trusses where they join the walls.

Foundation/Retaining Wall. At the rear of the building, the grade is sloping toward the structure. The concrete foundation stem wall



functions as a retaining wall and is severely deteriorated. The wall is slightly battered and there is a minimal footing at the bottom of the wall (see figures Appendix A). Removing earth behind the wall or sloping the grade away from the wall and installing a perimeter drain is recommended. Removal of the lateral overburden on the foundation stem wall can be accomplished by adding a small retaining wall uphill from the building. The area between the building and the retaining wall would provide the required drainage around the building. The original concrete foundation wall was not adequately damp-proofed and along with the grade sloping toward the building has allowed water to penetrate the wall. The water in combination with numerous freeze-thaw cycles has resulted in exfoliation of concrete, efflorescence on the surface, and an array of small cracks (see figures 73 & 73). Much of the wall can be repaired by applying a mortar coating, while the small severely damaged area next to the loading dock may have to be replaced. The exterior of the concrete wall should also be damp-proofed.

Concrete Floor Slab. The floor of the rear addition to the building is a concrete slab on grade which is deteriorated and cracked (see figure 76). Excessive moisture in combination with the heavily loaded area has contributed to the damaged floor. Correction of negative site grading and damp-proofing of the foundation will alleviate the cause of the decay. The deteriorated and cracked concrete slab on grade could be replaced or a self-leveling concrete topping could be placed on the existing slab.

Timber Framing. At the southeast corner of the market, the corner timber column and timber sill plate are rotten (see figure 75). The original wall boards in that area have been replaced with plywood and boards less than ten years ago and are already beginning to rot. Again, the grade around this portion of the building is sloping toward the structure allowing snow and rain water to accumulate next to the building's lower wooden structural system. Replacing damaged members and sloping and lowering grade away from the building to prevent a recurring problem is recommended.



Fireside Lounge Floor and Walls. Investigation of the structural floor and wall system in the Fireside Lounge revealed extensive insect and moisture damage to the wood members (see figure Appendix A). It is recommended that insecticides (as approved under current policy) be applied to eliminate the insect infestations and all damaged members be replaced or repaired. Clearance in the crawl space under room 100 is less than 12 inches from the bottom of the floor joists to the ground and the crawl space is not adequately ventilated. Crawl space vents are located in the concrete foundations but are blocked by the floor joists and exterior grade. Some of the floor joists and flooring have recently been replaced and are already beginning to show signs of rot. It is recommended that damaged floor joists and beams be replaced with treated wood members and earth in the crawl space be removed to provide a minimum of 18 inches clearance; adequate ventilation should also be provided by reducing exterior grade and either rehabilitating the existing nonfunctional vents or by cutting new crawl space vents in the existing foundation. Once proper under-floor clearance is established accessibility to the crawl space should be available from the existing access at the northwest corner of the building.





Figure B-1. Ranger Residence Garage Wall Framing and Diagonal Bracing





Figure B-2. Typical Ranger Residence and Garage Roof Framing



Park	SEQU 200D	NATIONAL PARK SERVICE DENVER SERVICE CENTER		Sheet	
Area	MARKET BLDG			of	
Project	HSR	By	R SILVA	Checked	Pkg.
Feature	ROOF PLAN	Date	3/88	Date	Account

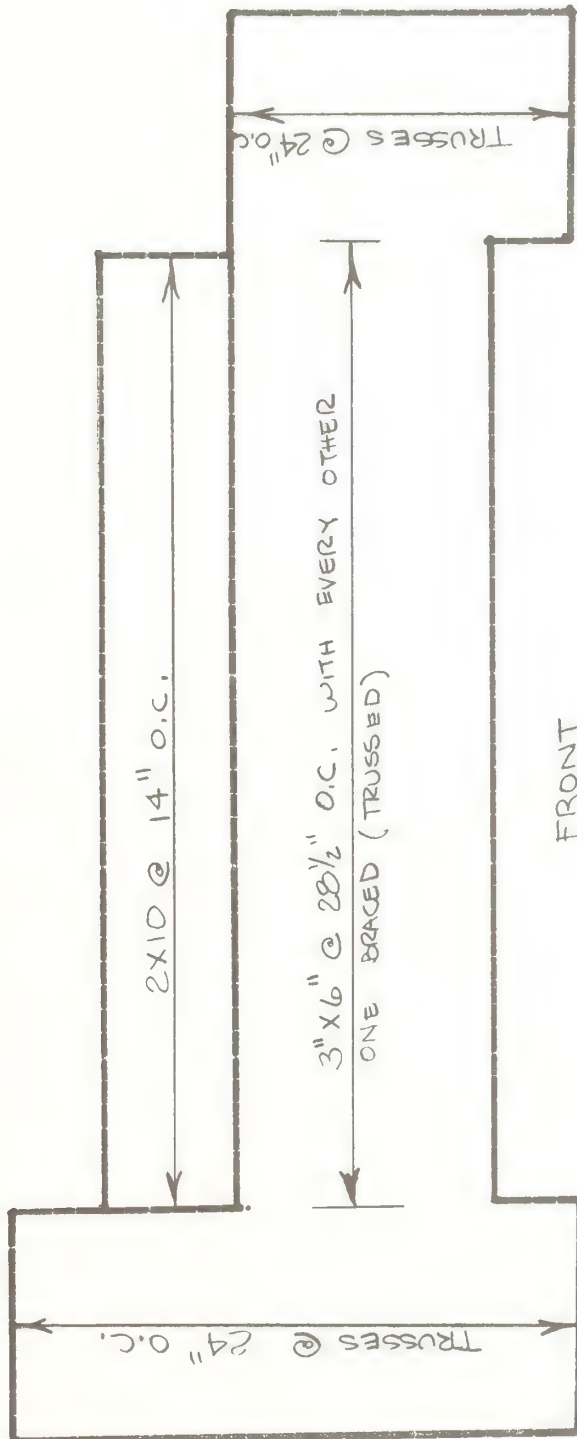


FIG. B3

Figure B-3.





Figure B-4. Typical Market Building Roof Framing.





Figure B-5. Market building shed dormer framing





Figure B-6. Market Building Valley Rafter Framing



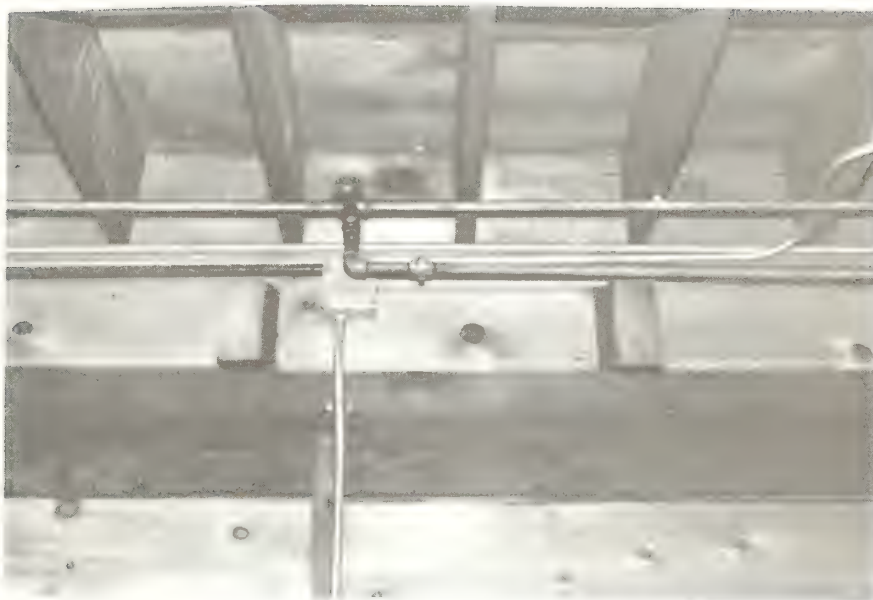


Figure B-7. Market Building, shed addition framing with rafters from main building extending below





Figure B-8. Market building crawl space



Park	SEQU 200D	NATIONAL PARK SERVICE DENVER SERVICE CENTER		Sheet	1
Area	MARKET BLDG			of	11
Project	HSR	By	R. SILVA	Checked	
Feature	SHED ROOF	Date	11/9/87	Date	
				Pkg.	
				Account	

FIND TOTAL ALLOWABLE LOAD

EXISTING: SPAN = 11'-10"

2X10 @ 14" O.C.

ASSUME MATERIAL DOUGLAS-FIR #2

$F_b = 1450 \text{ psi}$

$LDF = 1.15$

$$M = F_b \times S$$

$$= 1450 \text{ psi} \times 1.15 \times 21.39 \text{ in}^3$$

$$= 35,667.83 \text{ #-in}$$

$$M = \frac{wl^2}{8}$$

$$w = \frac{35,667.83 \text{ #-in} \times 8}{[(11 \times 12) + 10]^2}$$

$$= 14.15 \text{ #/in}$$

$$= 169.81 \text{ #/ft}$$

$$\text{TOTAL LOAD} = \frac{169.81 \text{ #/ft}}{14/12} = \boxed{146 \text{ psf}}$$

NO SNOW LOAD REDUCTION WILL  
BE COMPUTED BECAUSE OF UNCERTAINTY  
OF WOOD SPECIES

Figure B9. Sheets 1-11



Park	SEQU 200D	NATIONAL PARK SERVICE DENVER SERVICE CENTER		Sheet	2
Area	MARKET BLDG			of	11
Project	HSR	By	R. SILVA	Checked	
Feature	RAFTERS	Date	1/4/88	Date	
				Pkg.	
				Account	

FIND TOTAL ALLOWABLE LOAD FOR 3" X 6" RAFTERS  
SPAN = 10' - 3" (HORIZ.)

28½" TRIB. LOAD

$$S = \frac{3(6)^2}{6} = 18 \text{ IN}^3$$

$$F_b = 1250 \text{ psi} \quad \text{SPACING} > 24"$$

$$F_b \times S = 1250 \times 1.15 (\text{LDF}) \times 18 = 25,875 \text{ #-"}$$

$$W = \frac{25,875 \times 8}{(123)^2}$$

$$= 13.68 \text{ \#/"}$$

$$= 164.19 \text{ \#/ft}$$

$$\text{TOTAL LOAD} = \frac{164.19}{28.5/12} =$$

69 psf
--------



Park	SEQU 200D	NATIONAL PARK SERVICE DENVER SERVICE CENTER		Sheet	3
Area	MARKET BLDG			of	11
Project	HSR	By	R. SILVA	Checked	
Feature	TRUSSES	Date	1/5/88	Date	
				Pkg.	
				Account	

FIND ALLOWABLE TOTAL LOAD:

ASSUME: DF-L #2

$$F_b = 1250$$

$$F_t = 650$$

$$E = 1.7 \times 10^6$$

$$F_c = 1050$$

$$F_v = 95$$

ASSUME: ROOF

$$SL = 145 \text{ psf} \quad (\text{NO SL REDUCTION})$$

$$DL = 20 \text{ psf}$$

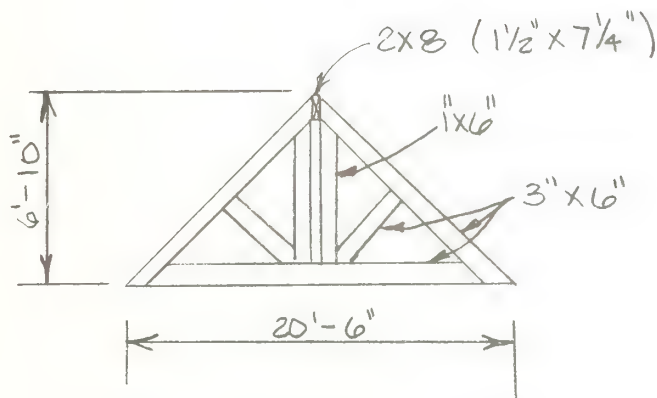
ATTIC

$$LL = 10 \text{ psf}$$

$$DL = 15 \text{ psf}$$

EXISTING TRUSS SYSTEM

28.5" O.C.



TOP CHORD:  $165 \text{ psf} \times \frac{28.5}{12} (\text{SPACING}) = 392 \text{ plf}$

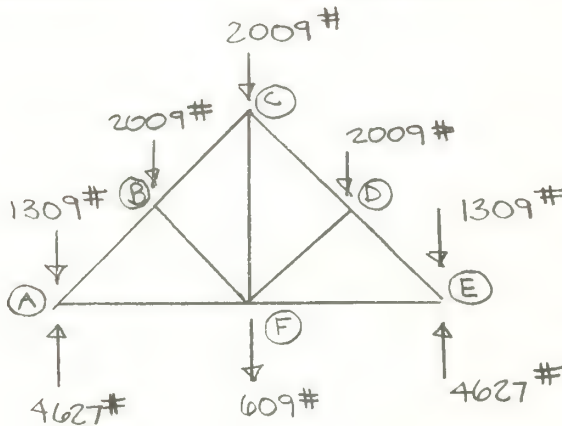
$$392 \text{ plf} \times 5.125 \text{ ft (PANEL PT.)} = 2009 \#$$

BOTTOM CHORD:  $25 \text{ psf} \times \frac{28.5}{12} = 59.4$

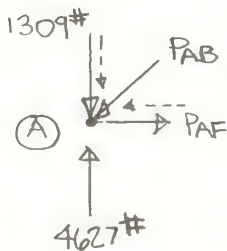
$$59.4 \times 10.25 = 609 \#$$



Park	NATIONAL PARK SERVICE DENVER SERVICE CENTER		Sheet <u>4</u>
Area			of <u>11</u>
Project	By <u>R SILVA</u>	Checked	Pkg.
Feature	Date <u>1/5/88</u>	Date	Account



BALANCED LOAD



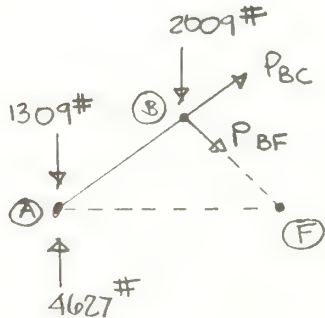
$$\Sigma V_A = 0$$

$$4627 - 1309 - P_{ABV} = 0$$

$$P_{ABV} = 3318\#$$

$$\frac{3318\#}{41} \times 73.9 = P_{AB} = 5980\# C$$

$$\frac{3318\#}{41} \times 61.5 = P_{AF} = 4977\# T$$



$$\Sigma M_F = 0$$

$$1309(10.25) + 2009(5.125) - 4627(10.25) - P_{BCV}(10.25) = 0$$

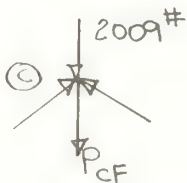
$$P_{BCV} = 2313.5\# C$$

$$\frac{2313.5\#}{41} \times 73.9 = P_{BC} = 4170\# C$$

$$\Sigma V_B = 0 \quad -2009 - 2313.5 + 3318 - P_{BFV} = 0$$

$$\frac{1004.5\#}{41} \times 73.9 = P_{BF} = 1811\# C$$

$$P_{BFV} = 1004.5\# C$$



$$-P_{CF} - 2009 + (2)(2313.5) = 0 \quad \Sigma V_C = 0$$

$$P_{CF} = 2618\# T$$

$$\text{CHECK @ (F)} \quad \Sigma V_F = 0 \quad 2(1004.5) + 609 = 2618\# \checkmark$$



Park	NATIONAL PARK SERVICE DENVER SERVICE CENTER		Sheet <u>5</u>
Area			of <u>11</u>
Project	By <u>R. SILVA</u>	Checked	Pkg.
Feature	Date <u>1/5/88</u>	Date	Account

$$f_{c \max} = \frac{P_{AB}}{A} = \frac{5980\#}{3(6)} = 332 \text{ psi} < F_c \quad \underline{\text{OK}}$$

$$f_{t \max} = \frac{P_{AF}}{A} = \frac{4917}{18} = 276.5 \text{ psi} < F_t \quad \underline{\text{OK}}$$

$$\frac{P_F}{A} = \frac{2618}{2(6)} = 218.2 \text{ psi} \quad \underline{\text{OK}}$$

### COMBINED LOADING

NAILED CONNECTIONS  $\therefore A_n = A_g$

$$M = \frac{59.4(10.25)^2}{8} = 780 \#-ft$$

$$F_b = \frac{780\#-ft \times 12}{18} = 520 \text{ psi} < F_b \quad \underline{\text{OK}}$$

$$\frac{F_t}{F_t} + \frac{F_b}{F_b} = \frac{276.5}{650 \times 1.15} + \frac{520}{1250 \times 1.15} = 0.73 < 1.0 \quad \underline{\text{OK}}$$

$$\frac{l}{d_x} = \frac{73.9}{6} = 12.3 > 11 \quad K = 0.671 \sqrt{\frac{1.7 \times 10^6}{1050 \times 1.15}} = 25.17 > 12.3$$

$$F'_c = 1050(1.15) \left[ 1 - \frac{1}{3} \left( \frac{12.3}{25.17} \right)^4 \right] = 1184.5 \quad F'_c > F_c \quad \underline{\text{OK}}$$

$$M = \frac{392(5.125)^2}{8} = 1287 \#-ft$$

$$F_b = \frac{1287 \times 12}{18} = 858 \text{ psi} \quad F_b \times LDF = 1437.5 > F_b \quad \underline{\text{OK}}$$

$$J = \frac{12.3 - 11}{25.17 - 11} = 0.0917 \quad \frac{F_c}{F'_c} + \frac{F_b}{F_b - JF_c}$$

$$\frac{332}{1184.5} + \frac{858}{1437.5 - 0.0917(332)} = 0.89 < 1.0 \quad \underline{\text{OK}}$$

INCREASE SL TO OBTAIN 1.0

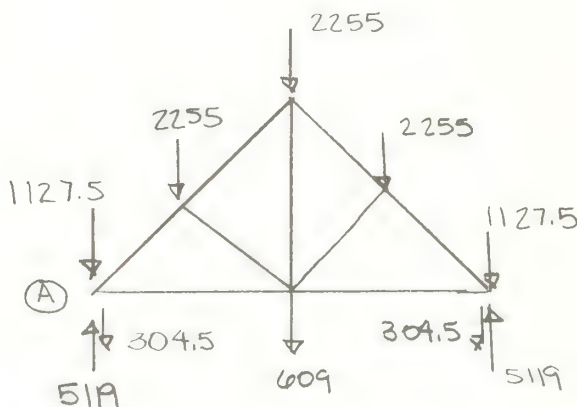


Park	NATIONAL PARK SERVICE DENVER SERVICE CENTER		Sheet <u>6</u>
Area			of <u>11</u>
Project	By <u>R SILVA</u>	Checked	Pkg.
Feature	Date <u>1/5/88</u>	Date	Account

TRY SL = 165 psf (NO SL REDUCTION DUE TO ROOF SLOPE)

$$\text{TOP CHORD } 185 \times \frac{28.5}{12} = 440 \text{ plf}$$

$$440 \times 5.125 = 2255 \#$$



MAX. VALUES FOUND @ PT A

$$\Sigma V_A = 0$$

$$5119 - 1127.5 - 304.5 - P_{ABV} = 0$$

$$P_{ABV} = 3687$$

$$P_{AB} = \frac{3687}{41} \times 73.9 = \underline{\underline{6646 \#}}$$

$$P_{AF} = \frac{3687}{41} \times 61.5 = \underline{\underline{5531 \#}}$$

$$f_{c \max} = \frac{6646}{18} = 369 \text{ psi}$$

$$f_{t \max} = \frac{5531}{18} = 307 \text{ psi}$$

$$M = \frac{440(5.125)^2}{8} = 1445$$

$$\frac{307}{650 \times 11.15} + \frac{520}{1250 \times 11.15} = 0.77 \text{ OK}$$

$$F_b = \frac{1445 \times 12}{18} = 963$$

$$\frac{369}{1184.5} + \frac{963}{1437.5 - 0.0917(369)} = 0.9976 \sim 1.0 \text{ OK}$$

ASSUMED ALLOWABLE TOTAL LOAD OF

185 psf

OK



Park	SEQU 200D	NATIONAL PARK SERVICE DENVER SERVICE CENTER		Sheet	7
Area	COMFORT STATION			of	11
Project	HSR	By	R SILVA	Checked	Pkg.
Feature	TRUSSES	Date	3/25/88	Date	Account

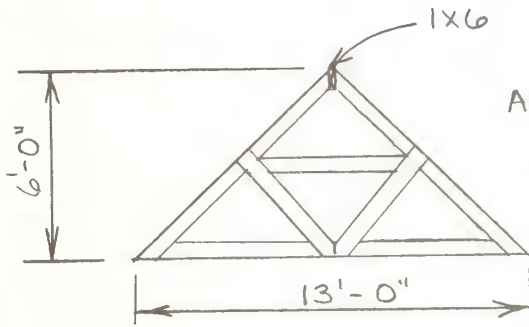
FIND TOTAL ALLOWABLE LOAD :

ASSUME : DF-L #2

ROOF SL = 200 psf (NO SL REDUCTION)  
DL = 10 psf

ATTIC LL = 5 psf  
DL = 5 psf

EXISTING TRUSS SYSTEM



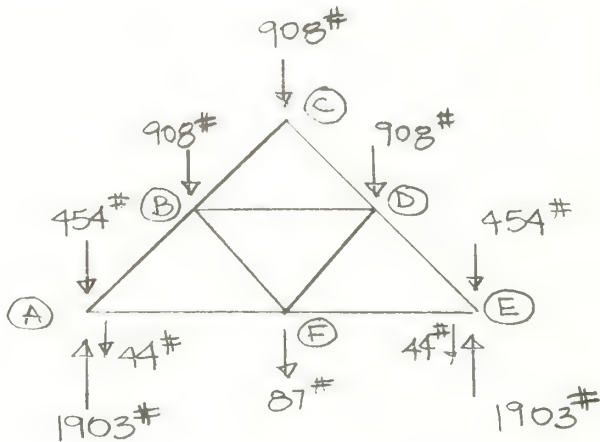
ALL OTHER MEMBERS 2x6

TOP CHORD :  $210 \text{ psf} \times 1.33 \text{ (SPACING)} = 279.3$   
 $279.3 \times 3.25 = 908 \#$

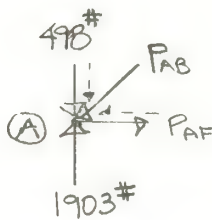
BOTTOM CHORD :  $10 \times 1.33 = 13.3$   
 $13.3 \times 6.5 = 87 \#$



Park	NATIONAL PARK SERVICE DENVER SERVICE CENTER		Sheet <u>8</u>
Area			of <u>11</u>
Project	By <u>R SILVA</u>	Checked	Pkg.
Feature	Date <u>3/25/88</u>	Date	Account



BALANCED LOAD



$$\sum V = 0$$

$$1903 - 44 - P_{ABV} = 0$$

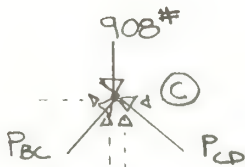
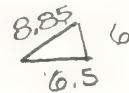
$$P_{ABV} = 1405\#$$

$$\frac{P_{AB}}{8.85} = \frac{1405}{6}$$

$$P_{AB} = 2072\# \text{ C}$$

$$\frac{1405}{6} = \frac{P_{AF} = P_{ABH}}{6.5}$$

$$P_{AF} = 1522\# \text{ T}$$

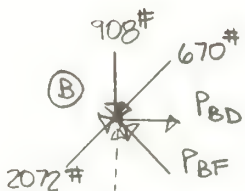


$$\sum V = 0$$

$$P_{BCV} = P_{CDV} = \frac{1}{2}(908) = 454\#$$

$$\frac{P_{CD}}{8.85} = \frac{454}{6}$$

$$P_{CD} = P_{BC} = 670\# \text{ C}$$



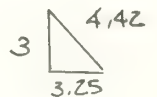
$$\sum V = 0$$

$$-454 - 908 + P_{BFV} + 1405 = 0$$

$$P_{BFV} = -43\#$$

$$\frac{P_{BF}}{4.42} = \frac{-43}{3}$$

$$P_{BF} = 63\# \text{ T}$$



$$\sum H = 0$$

$$-492 + P_{BD} + 1522 + 46 = 0$$

$$P_{BD} = 1076 \text{ C}$$

$$\text{CHECK @ (F) } +43 + 43 - 87 = 0 \quad \underline{\underline{OK}}$$



Park	NATIONAL PARK SERVICE DENVER SERVICE CENTER		Sheet 9
Area			of 11
Project	By R SILVA	Checked	Pkg.
Feature	Date 3/28/88	Date	Account

$$F_{c \max} = \frac{2072^{\#}}{2 \times 6} = 173 \text{ psi} \quad \underline{\underline{OK}}$$

$$F_{t \max} = \frac{1522}{12} = 127 \text{ psi} \quad \underline{\underline{OK}}$$

COMBINED LOADING

$$A_n = A_g$$

$$M = \frac{13.3 (6.5)^2}{8} = 70.24$$

$$F_b = \frac{70.24 \times 12}{\frac{2(6)^2}{6}} = 70.24 < F_b \quad \underline{\underline{OK}}$$

$$\frac{127}{650 \times 1.15} + \frac{70.24}{1250 \times 1.15} < 1 \quad \underline{\underline{OK}}$$

$$\frac{I}{d_x} = \frac{53}{6} = 8.84 < 11$$

$$F'_c = 1050(1.15) = 1208$$

$$M = \frac{279.3 (4.42)^2}{8} = 682$$

$$F_b = \frac{682 \times 12}{12} = 682 \quad \underline{\underline{OK}}$$

$$J < 0 \quad \frac{173}{1208} + \frac{682}{1438} = 0.62 < 1 \quad \underline{\underline{OK}}$$

ALLOWABLE TOTAL LOAD > 210 psf
--------------------------------



Park	SEQU 200D	NATIONAL PARK SERVICE DENVER SERVICE CENTER		Sheet	10
Area	RANGER RESIDENCE			of	11
Project	HSR	By	R SILVA	Checked	
Feature	TRUSSES	Date	3/30/88	Date	
				Pkg.	
				Account	

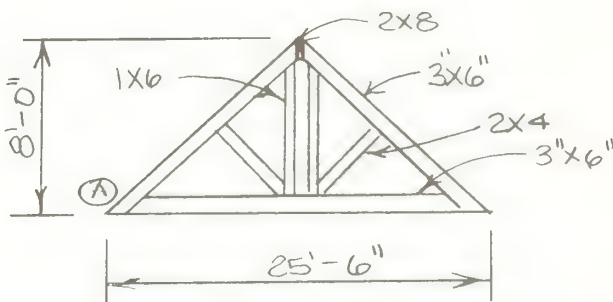
FIND ALLOWABLE TOTAL LOAD:

ASSUME: DF-L #2

ROOF SL = 160 psf (NO SL REDUCTION)  
DL = 15 psf

ATTIC LL = 10 psf  
DL = 15 psf

EXISTING TRUSS SYSTEM 24" O.C.



TOP CHORD:

$$175 \times 2 = 350$$

$$350 \times 6.375 = 2231 \#$$

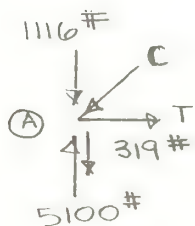
BOTTOM CHORD:

$$25 \times 2 = 50$$

$$50 \times 12.75 = 638 \#$$

$$\frac{15}{12.75} \triangle 8$$

MAX @ PT. A SEE MARKET CALC.



$$\sum V = 0 \quad -1116 - 319 + 5100 = C_v = 3665 \#$$

$$C = \frac{3665}{8} \times 15 = 6872 \#$$

$$T = \frac{3665}{8} \times 12.75 = 5841 \#$$



Park	NATIONAL PARK SERVICE DENVER SERVICE CENTER		Sheet 11
Area			of 11
Project	By R SILVA	Checked	Pkg.
Feature	Date 3/30/88	Date	Account

$$F_{cmax} = \frac{6872}{18} = 382 \text{ psi}$$

$$F_{tmax} = \frac{5841}{18} = 325 \text{ psi}$$

### COMBINED LOADING

$$M = 50 \frac{(12.75)^2}{8} = 1016 \text{ ft-lb}$$

$$\frac{325}{650 \times 1.15} + \frac{425}{1250 \times 1.15} < 1.0 \text{ OK}$$

$$F_b = 638 \times 12 / 18 = 425 \text{ psi}$$

$$\frac{l}{d_c} = \frac{90}{6} = 15 > 11 \quad K = 25.17$$

$$F'_c = 1050(1.15) \left[ 1 - \frac{1}{3} \left( \frac{15}{25.17} \right)^4 \right] = 1157$$

$$M = \frac{350 (6.375)^2}{8} = 1778$$

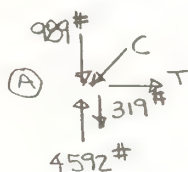
$$F_b = \frac{1778 \times 12}{18} = 1185 \text{ psi} < 1437.5$$

$$J = \frac{15 - 11}{25.17 - 11} = 0.282$$

$$\frac{382}{1157} + \frac{1185}{1437.5 - (0.282)(382)} = 1.22 > 1.0 \text{ N.G.}$$

TRY 140 psf SL

$$155 \times 2 = 310 \quad 310 \times 6.375 = 1977 \text{ ft-lb}$$



$$\Sigma V = 0 \quad 4592 - 319 - 989 = C_v = 3284 \text{ #}$$

$$C = \frac{3284}{8} \times 15 = 6158 \text{ #}$$

$$F_c = 342 \text{ psi}$$

$$T = \frac{3284}{8} \times 12.75 = 5234 \text{ #}$$

$$F_t = 291 \text{ psi}$$

$$M = 310 \frac{(6.375)^2}{8} = 1575 \text{ ft-lb}$$

$$F_b = 1050 \text{ psi}$$

$$\frac{342}{1157} + \frac{1050}{1437.5 - (0.282)(342)} = 1.08 \sim 1.0$$

SAY 135 psf

ALLOWABLE TOTAL LOAD OF

135 psf



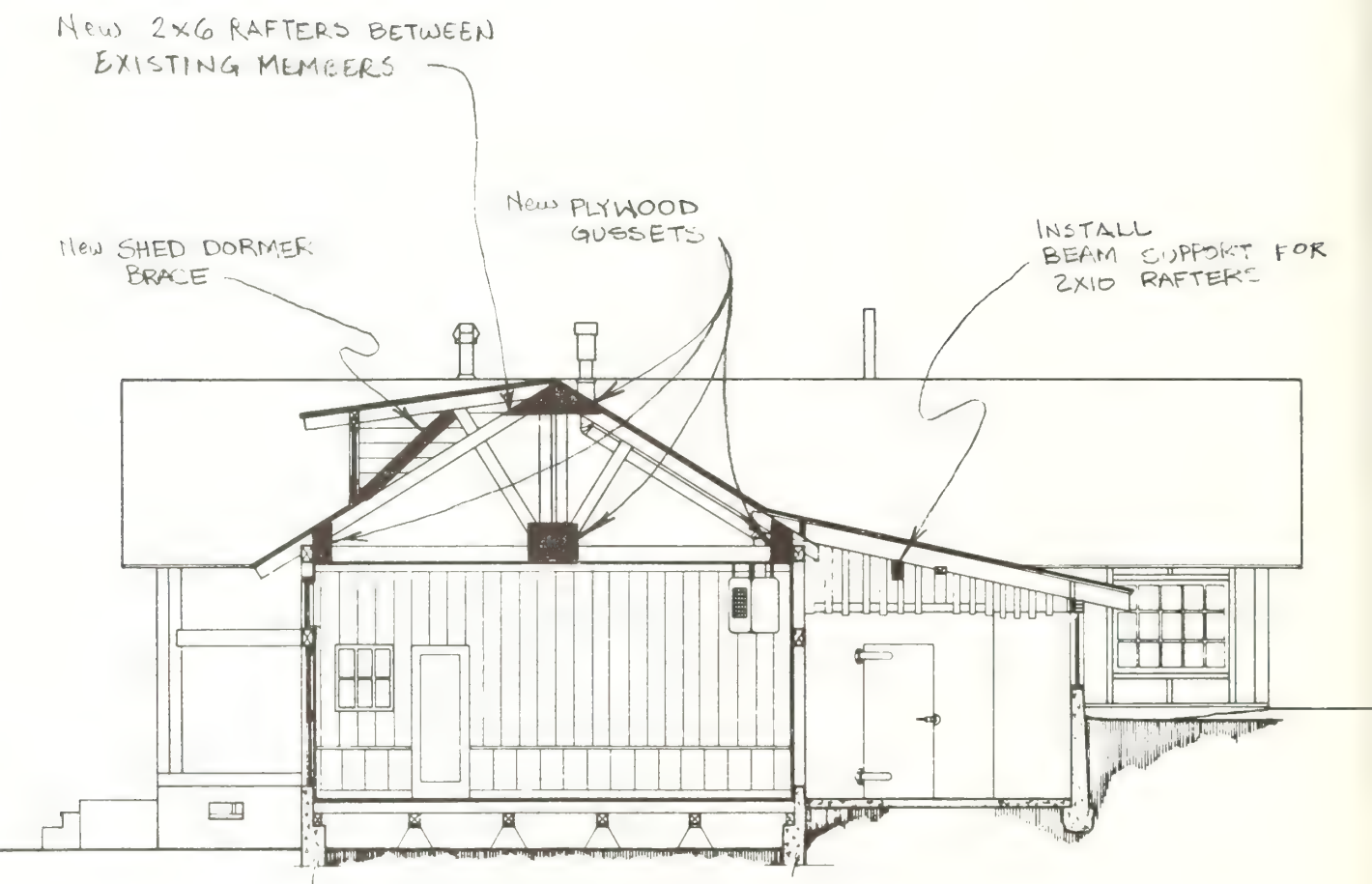


Figure B-10. Market Section Showing Proposed Bracing and Supports



GIANT FOREST ANNUAL PRECIPITATION<sup>1</sup>  
 SEQUOIA NATIONAL PARK, CALIFORNIA<sup>1</sup>  
 (in inches)

	<u>Mean Monthly</u>	<u>Max. Monthly</u>	<u>Min. Monthly</u>	<u>Mean Monthly Snowfall</u>	<u>Max. Snowfall</u>	<u>Min. Snowfall</u>
JAN	10.08	49.55	1.58	42.1	97.5	0.0
FEB	6.48	26.22	0.53	26.0	187.0	2.0
MAR	5.84	14.70	T <sup>2</sup>	40.0	81.0	0.0
APR	4.36	18.57	0.39	26.7	157.0	0.0
MAY	1.02	2.67	T	4.8	25.0	0.0
JUN	0.47	2.22	0.00	0.0	T	0.0
JUL	0.13	0.63	0.00	--	--	--
AUG	0.28	1.81	0.00	--	--	--
SEP	0.53	1.95	0.00	0.1	1.0	0.0
OCT	1.28	3.07	0.00	1.8	11.0	0.0
NOV	5.35	10.18	0.33	19.3	64.0	1.5
DEC	8.14	28.02	0.08	35.5	106.0	0.0
ANNUAL	43.96	49.55	0.00	206.3	187.0	0.0

<sup>1</sup> Source: U.S. Department of the Interior, National Park Service, Sequoia National Park; period of record, 1960-1974.

<sup>2</sup> Trace

Table B-11. Giant Forest Annual Precipitation



## APPENDIX C: ELECTRICAL ENGINEERING REPORT

by

Electrical Engineer Phil Klos, Western Team, Denver Service Center

### PURPOSE

The purpose of this investigation (May 5-8, 1986) is to assess the condition of the electric power system serving each of the three buildings slated to remain in the Giant Forest Village Historic District. The systems were evaluated to determine their adequacy for current and future use and occupancy.

### DISCUSSION

The Giant Forest Village was electrified in the mid-1930s when the park wired all the existing buildings for electricity and installed about thirty 3-kilowatt generators to supply the power. In the 1950s, Pacific Gas and Electric constructed their own power line into the area. The buildings were all originally wired with two-wire romex, which met the code at that time. The three buildings that are the subject of this HSR have since been rewired.

#### Ranger Residence/Garage

The ranger residence and its garage were rewired in 1983 to meet code. When that was done, the old two wire Romex was replaced by three wire Romex, and the old fuse panel was replaced by a modern, twenty-two space breaker panel. The breaker panel has no main breaker, and on the exterior of the house is installed a meter socket/100 amp circuit breaker combination. There is no intrusion alarm system installed in the residence, there is a battery powered smoke detector installed on the building hallway ceiling.



## Market

The Giant Forest Market building was rewired in the winter of 1975-76 to meet code. About ninety-nine percent of the old wire Romex was replaced by type TW conductor in metallic conduit, and the remaining one percent of the wiring was replaced by three wire Romex. The building's security system is minimal, consisting of a light beam/mirror intrusion detector at the front door, two rotating TV cameras that do not work, and a magnetic door detector in the stockroom that is disconnected. There is no fire, smoke, or heat detector system installed in the building.

## Comfort Station

The comfort station was rewired in 1983 to meet code. The interior of the comfort station contains a ceiling mounted fluorescent light fixture, a duplex wall receptacle in each lavatory, and an electric forced air furnace in the pipe chase area (room 101) to furnish heat to the building. There are also three exterior incandescent lights and one mercury vapor area light that are served from the comfort station's electric power system. There is no intrusion, fire, smoke or heat detection system installed in the building. There are two meter/breaker panel combinations mounted on the outside of the comfort station that were originally installed in the mid-1950's, one of which is no longer used and which should be removed when this structure is rehabilitated.

## RECOMMENDATIONS

In regard to the National Electrical Code requirements, GFCI outlets should be installed in the comfort station outlets and in the bathroom and kitchen of the ranger residence and the garage.



It is also recommended that at the ranger residence, smoke detectors be installed in each of the two bedrooms as added protection. This is not a requirement of NEPA 74 for Household Fire Warning Equipment, but it is a recommended practice. In the Market, illuminated exit signs should be installed above all egress doors. Emergency power should be provided for this illumination.

Discussions with the historical architects indicate that there will be no modifications to the ranger residence/garage that will require any modifications to their electrical systems in the near term.

However, there will be an extensive rehabilitation of the Market after the park purchases the building from the concessioner and of the comfort station. This will result in approximately half the market being used for retail sales by the concessioner, and half of the building being used by the park for an interpretive center and visitor contact station. This rehabilitation will result in a modification of the electrical system in the building, the installation of a fire, smoke or heat detection system, and possibly an intrusion alarm system. The details of the rehabilitation have not been addressed at this time.

A risk assessment study should also be conducted to define the need, if any, for the installation of a lightning protection system for all three buildings.







Figure C-1. Market, North Wing, West Facade (5/86). Exterior electrical wiring remaining from former light.

Figure C-2. Market Dormer (10/86). A second generation exterior light is located above the main entry under the dormer eave.







Figure C-3. Market Detail (10/86). The window fuse box is probably the original of 1938 electrification.

Figure C-4. Market Detail (10/86). Exterior mounted electrical conduit and A/C outlet on north facade.







Figure C-5. Market, Manager's Office (5/86). The fluorescent fixture and surface mounted electrical conduit seen here were installed as part of the 1975 remodeling.

Figure C-6. Market Interior Detail (5/86). Joist mounted electrical conduit was installed in 1975. Note, insulation from waterline was tested for asbestos, see Appendix F.



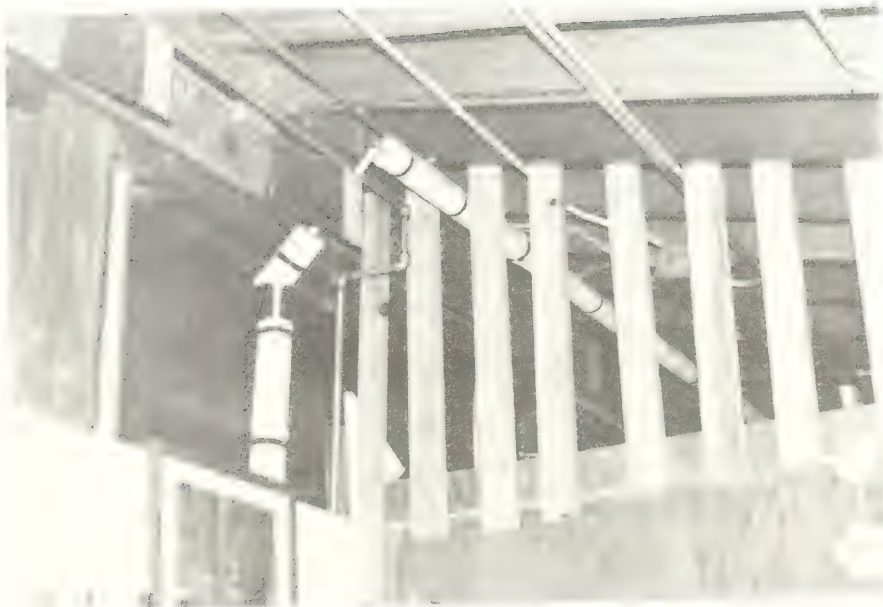




Figure C-7. Market Attic Detail (5/86). Close-up view of junction box and wiring, both in and out of conduit, as installed in the attic in 1975.







## APPENDIX D: MECHANICAL ENGINEERING REPORT

by

Mechanical Engineer Bruce Thoms, (formerly) Western Team,  
Denver Service Center

### PURPOSE

The purpose of this investigation was to assess three historic buildings. The buildings investigated were the market, the comfort station, and the ranger residence of the Giant Forest area of Sequoia National Park. The buildings were evaluated to determine mechanical system adequacy for current and proposed uses, and to consider the need for fire protection systems.

### SUMMARY

The market building is heated by three ceiling mounted propane-fired unit heaters. The plumbing system consists of three sinks and condensate waste from various coolers. The systems are adequate for current use, but should be replaced when the buildings undergo the rehabilitation planned.

The comfort station is heated by an electric furnace. The plumbing system is adequate and appears to be functioning well. The building is ventilated by means of operable windows, and the doors are often left open for additional ventilation. This is a poor practice from both a ventilation and energy conservation standpoint. When the building is rehabilitated, it is recommended that the furnace be retained, its ductwork replaced, the plumbing system be replaced, and a mechanical ventilation system be installed.

The ranger residence is heated by a wood stove and an oil-fired furnace. It has a residential plumbing system, which is in good functional



condition. There is a buried fuel oil tank of unknown exact size, location, and condition. When the ranger residence is rehabilitated, it is recommended that the fuel oil tank be replaced, the oil furnace be retained, and the plumbing be replaced.

## DISCUSSION/FINDINGS

Currently, the Giant Forest area is a large development complete with water, sewer, and electric utilities. The market also is served by a propane gas tank farm. As the move out of Giant Forest takes shape, decisions made concerning these utilities will affect the various mechanical systems. For the purposes of this report, it is assumed that water, sewer, and electric service will continue to be available, and the propane tanks will be removed. Close coordination will need to be maintained between civil, electrical, and mechanical engineers working on this project.

Weather data from park records indicate average January temperatures range between 20 and 35°; average July figures are in the 55 to 80° range. Winter lows do not drop below zero. Discussions with year-round residents of the area indicate that the normal low winter temperature is about 30°F. The temperature dropped to 10°F once in recent history. Snow levels of several feet can be expected in the winter. Summers are mild with temperatures in the 70s and 80s. Very few existing buildings in Giant Forest have space cooling, and those that do use evaporative coolers. The buildings considered in this report all have water piping uninsulated in crawl spaces and exterior walls with no freezing problems, which supports the belief that subfreezing temperatures are rare and of short duration.

### Market

Space and water heating in the market building is by propane-fired appliances. The water heater is an A.O. Smith 30 gallon, model no.



KGA-30-879, 36,000 BTUH (figure D-4). Currently it is the sole source of hot water in the market building and serves one employee sink in the market section (figure D-1), and one employee sink and a triple bar sink in the bar section of the building. It is adequate for present uses but should be replaced to serve intended loads at the time of the building rehabilitation. An electric model would likely replace this unit assuming the propane is removed. The water pipe is partly covered by old style insulation, which is in bad shape (figure C-6). A sample was collected and sent to a lab for detection of asbestos. Test results report is included in Appendix F.

Space heating of the market building is provided by three propane-fired unit heaters. The bar and the main market area have identical Reznor Model No. LUS-100-F unit heaters rated for 100,000 BTUH input and 80,000 BTUH output (figure D-5). The market stockroom has a similar Reznor Model No. LUS-50-F unit heater rated for 50,000 BTUH input and 40,000 BTUH output. All unit heaters are suspended from the ceiling with venting through the roof. The propane distribution is underground from the fuel tanks to a main manifold at the front of the market with an exit manifold located on the north elevation of the market (figure D-6). The underground piping is wrapped 1-inch galvanized steel. There is a Fisher Model No. 772V-101 secondary regulator mounted ahead of the main manifold. Above ground piping is of soft drawn copper, compression fittings, and L-P gas listed valves, which are Lukenheimer Figures 400 and 2125. Distribution to the various appliances is through the attic. Two other buildings get their propane supply through the market piping. They are tagged as the "studio" and "Frank's Shop". The space heating system is in good condition, and is adequate for current uses. When the building is rehabilitated it is recommended that the unit heaters be replaced with a central system that could be much less obtrusive. A logical choice would be an oil-fired boiler with perimeter baseboard radiation. The building is kept cool in the summer by fixed louvers in the ceiling (figure D-8), which allow the hot air to flow through the attic and out operable attic dormer windows by convection.



The building water service is through a metered 3/4-inch line buried approximately 18 inches underground. The building sewer is 4-inch and is accessible in the crawl space (figure D-2).

Other existing equipment that interfaces with mechanical systems in the market are two walk-in coolers, three commercial ice makers, and three refrigerated cases. These refrigeration units are internal to the building and add to the heat generated inside the building (figure D-3).

### Comfort Station

The comfort station is heated by an electric furnace located in the chase area between the men's and women's halves. The unit is single phase, 240 volt, 31.3 amps, Tutco Model No. DHB2927-7.5-1P. The furnace is the downflow type with flexible round insulated ductwork. The ductwork installation is in need of repair or replacement. The comfort station is ventilated by means of operable windows. The ventilation is inadequate and the doors are often propped open. It is recommended that mechanical ventilation be added to the comfort station. For purposes of energy conservation an exhaust fan should be installed, which could be operated by a door switch and/or incorporate a heat exchanger.

The plumbing fixtures, probably dating from the early 1960s, are serviceable and may or may not be replaced at the time of building rehabilitation, based on architectural determination. The water supply to the building is unmetered. The comfort station has a 4-inch sewer connection and a 4-inch vent through the roof. Two-inch auxilliary vents have been added under the eaves on both sides of the building, presumably to prevent snow on the roof from making the venting system inoperative (figure D-2). Most of the visible water piping is insulated, and is located in furred-out, uninsulated, exterior walls. There has been some discussion of converting the comfort station to some type of self-contained waste system. This type of system is not recommended based on their poor performance and maintenance experience with them in



the past. It is recommended that all piping exposed during the rehabilitation be replaced, and underslab piping be leak tested and replaced if necessary.

### Ranger Residence

The ranger residence is heated by an oil-fired furnace made by the Rheem Company. The furnace nameplate was not visible on the equipment, but the resident indicated it was sized adequately to provide comfort in the winter. Heating in the living room is supplemented by a wood burning stove installed in the fireplace. The furnace and the wood stove appear fairly new and in good condition. It is recommended that they be retained.

The wood stove needs modification to provide a means of chimney cleanout where the metal stove flue meets the stone chimney.

The plumbing system is functioning adequately for current uses. Due to the age, condition, and apparent amount of modifications, it is recommended that the plumbing system in the ranger residence be replaced at the time of building rehabilitation.

There is a buried oil tank serving the furnace. Judging from the condition and age of the vent and fill pipes it is recommended that the oil tank be replaced and the possibility of locating it aboveground be investigated because of contemporary concerns for leakage.

Currently, there are several well placed fire hydrants around these buildings. None of the buildings have any automatic fire protection devices. Based on the size, type, and use of these buildings fire detection but not automatic fire suppression systems are recommended. Even so, installation of a dry-pipe sprinkler system could be easily added



to the market, the only structure planned as a place of assembly and currently built of wood with wood finishes. The system, with the exception of the sprinkler heads, could be nearly totally concealed from view. Further consideration of such an installation is addressed elsewhere in the HSR.



Figure D-1. Market--employee wash sink (5/86).







Figure D-2. Market--Condensation Drains from Walk-in Cooler (5/86).







Figure D-3. Market--Walk-in Cooler Compressors (5/86).



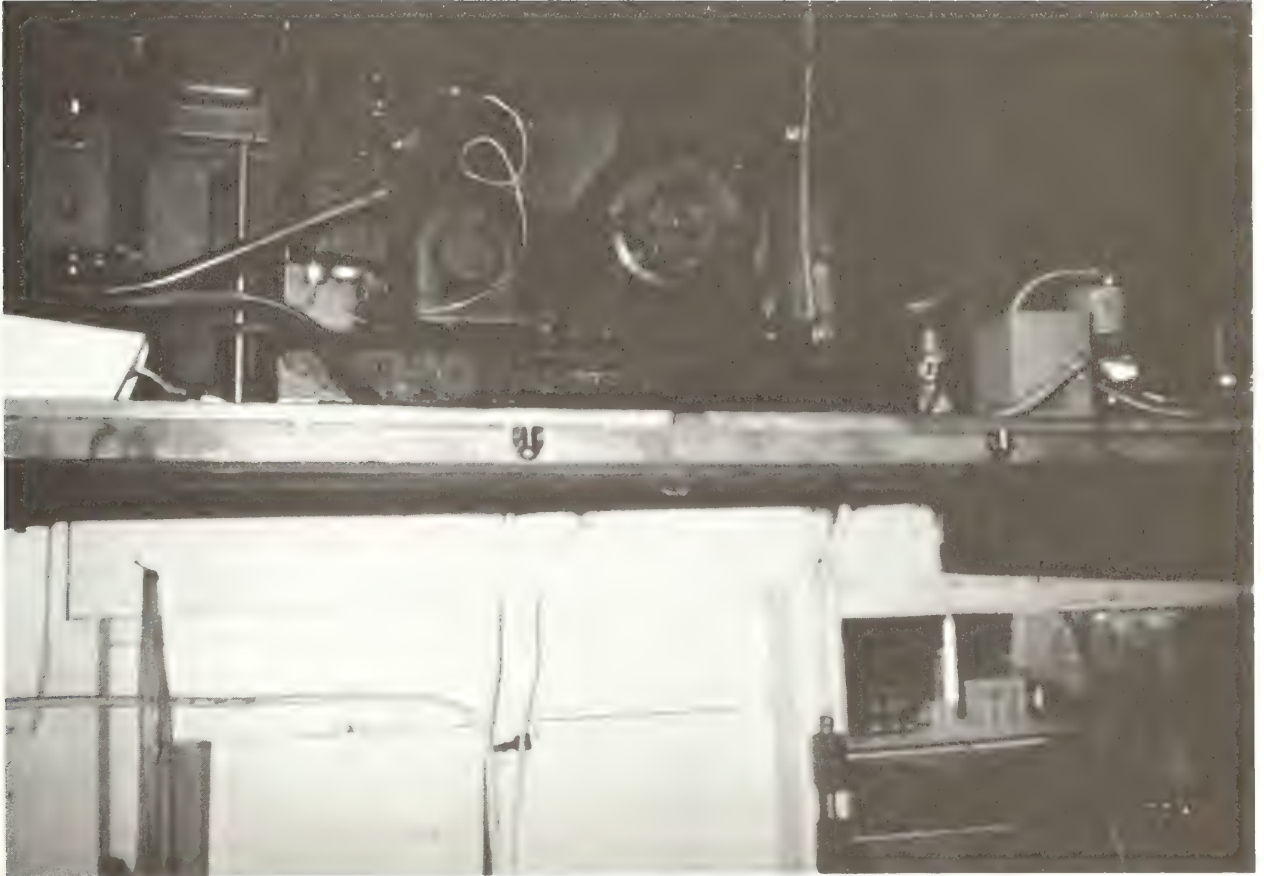




Figure D-4. Market--Water Heater (5/86).

Figure D-5. Market--Unit Heater (5/86).







Figure D-6. Market--Propane Distribution Vault (5/86).

Figure D-7. Comfort Station--Auxilliary Vent Line Under Eaves (5/86).







Figure D-8. Market--Ceiling Mounted Wooden Ventilation Grill (5/86).







APPENDIX E: COMPLIANCE DATA (MOA)

Memorandum of Agreement - 1978

Advisory Council on Historic Preservation, Concurrence Memorandum - 1988



Advisory Council on  
Historic Preservation  
1522 K Street N.W.  
Washington, D.C. 20005

August 28, 1978

H-42170

Mr. Howard H. Chapman  
Regional Director, Western Region  
National Park Service  
450 Golden Gate Avenue, Box 36063  
San Francisco, California 94102

Dear Mr. Chapman:

The Memorandum of Agreement for the removal of overnight facilities at Sequoia National Park, California, has been approved by the Chairman of the Council. This document constitutes the comments of the Council as required by Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f, as amended, 90 Stat. 1320) and completes the "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800). A copy of the Agreement is enclosed.

A copy of this Memorandum of Agreement should be included in any environmental assessment or statement prepared for this undertaking in compliance with the National Environmental Policy Act and should be retained in your records as evidence of compliance with Section 106 of the National Historic Preservation Act of 1966. The Council appreciates your cooperation in reaching a satisfactory solution to the issues raised in this matter.

Sincerely yours,



Myra F. Harrison  
Assistant Director  
Office of Review and  
Compliance

Enclosure

SEP 6 '78

Regional Director	
Dep. Regional Dir.	
Administration	
Operations	
Res. Mgmt. Plan	
EEG	9/6/78
Public Affairs	
Action Item	
Myra F. Harrison DSC	
9/8/78	



Advisory Council on  
Historic Preservation  
1522 K Street N.W.  
Washington, D.C. 20005

MEMORANDUM OF AGREEMENT

WHEREAS, the National Park Service proposes to remove overnight facilities in Sequoia National Park, California, that adversely affect internationally significant natural values for the preservation of which Congress established the park; and,

WHEREAS, the National Park Service, in consultation with the California State Historic Preservation Officer, has determined that this undertaking as proposed would have an adverse effect upon the Giant Forest Lodge Historic District, the Giant Forest Village, and the Camp Kaweah Historic District, properties included in the National Register of Historic Places; and,

WHEREAS, pursuant to Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f, as amended, 90 Stat. 1320) and Section 2(b) of Executive Order 11593, the National Park Service has requested the comments of the Advisory Council on Historic Preservation; and,

WHEREAS, pursuant to the procedures of the Advisory Council on Historic Preservation (36 CFR Part 800), representatives of the Advisory Council on Historic Preservation, the National Park Service, and the California State Historic Preservation Officer have consulted and reviewed the undertaking to consider feasible and prudent alternatives to avoid or satisfactorily mitigate the adverse effect; now,

THEREFORE:

It is mutually agreed that implementation of the undertaking, in accordance with the following stipulations, will satisfactorily mitigate any adverse effect on the above-mentioned properties:

Stipulations

1. Prior to demolition, the National Park Service will consult with the Historic American Buildings Survey (HABS), Heritage Conservation and Recreation Service, and the California State Historic Preservation Officer to develop and implement a program to record the Giant Forest Village, and Camp Kaweah Historic District to standards established by the Historic American Buildings Survey. The recordation program may include, but not necessarily limited to, a written history, record photographs, and measured drawings.



Page Two  
Memorandum of Agreement  
Removal of Overnight Facilities  
Sequoia National Park, California

Copies of the documentation resulting from the recordation program will be filed with HABS, the Archives of the State of California, and with the California State Historic Preservation Officer;

2. Suitable architectural features and hardware from the cafeteria will be salvaged for reuse in restoration of the Giant Forest Market;
- ✓ 3. The Giant Forest Market will remain in situ and will be adaptively restored as a visitor contact station. The comfort station and *km* the District Ranger's Residence will remain in situ and continue to be used for those purposes;
4. Beetle Rock, an element of the significance of the Camp Kaweah Historic District, will not be altered by the proposed undertaking; and,
5. Upon completion of demolition in each historic district, the National Park Service will notify the Keeper of the National Register, in writing, in order that it can be removed from the National Register.

*Robert M. Utley* (date) *2/12/78*  
Deputy Executive Director  
Advisory Council on Historic Preservation

*Leland H. Chapman* (date) *7/25/78*  
National Park Service

*Knox McElroy* (date) *8/1/78*  
California State Historic Preservation  
Officer

*Robert M. Gifford* (date) *8/21/78*  
Chairman  
Advisory Council on Historic Preservation





# United States Department of the Interior

## NATIONAL PARK SERVICE

### WESTERN REGION

450 GOLDEN GATE AVENUE, BOX 36063  
SAN FRANCISCO, CALIFORNIA 94102

IN REPLY REFER TO:

H4217(WR-RH)

July 15, 1988

JUL 25 1988

Mr. Robert Fink  
Chief, Western Office of Project Review  
Advisory Council on Historic Preservation  
730 Simms Street, Room 450  
Golden, Colorado 80401

Dear Mr. Fink:

The Western Region proposes to approve and implement a Historic Structures Report, Giant Forest Rustic, which encompasses three structures located in Sequoia National Park, California. The structures are part of the Giant Forest Village/Camp Kaweah Historic District, a property on the National Register of Historic Places.

In accordance with the Procedures of the Advisory Council on Historic Preservation (36 CFR 800) we feel that the undertaking will have an effect. We also feel that the undertaking will have no adverse effect. We have consulted the California State Historic Preservation Officer (please see enclosed) who concurs.

Enclosed for your review is a draft copy of the Historic Structures Report. We regret that the quality of the photographs and graphics is poor in the draft. This will improve greatly when the approved final document is printed. If you have any questions, please call Historical Architect, Craig Frazier at our Denver Service Center at (303) 327-2573 or Tom Mulhern of this office at (415) 556-8376.

Sincerely,

Stanley T. Albright  
Regional Director, Western Region

Enclosures

RECEIVED	
Western Regional Office	
JUL 28 1988	
Regional Director	
Dep. Reg. Dir.	
Administrative	
Public Affairs	
Records Management	
Training	
Other	
Action Taken	



APPENDIX F: ASBESTOS TEST REPORT



*Received & accepted**CF*

JUN 13 1986

*SAMPLE from Giant Forest Mark**SEQU*

REPORT ON SERVICE NUMBER 21129IH

June 12, 1986

To: Craig Frazier  
National Park Service  
Denver, Colorado

Analysis: The following sample was submitted for analysis:  
One bulk sample for asbestos identification and content determination.

Method: ASBESTOS (identification)  
Duplicate portions of each bulk material were immersed in liquid media of known index of refraction on a microscope slide and observed at 100 power using a McCrone Dispersion Staining Objective with polarizing light. Characteristics of the fibers under polarizing light and under dispersion staining conditions using four media were compared to similarly prepared samples of known asbestos types. Estimates of the asbestos fiber content were made by comparing the quantity of non-asbestos material to asbestos fibers.

Results: The results are found on Table 1.

Discussion: Detection limit for bulk samples is 1% asbestos fibers.  
Laboratory data are filed and available upon request.

Submitted by:

  
David F. Farler  
Laboratory Director

DFF/nl



SN21129IH  
June 12, 1986

TABLE 1

Sample Number	Asbestos (sample contains)
#1 pipe insulation	no detected asbestos 75-90% glass-like fibers 1-5% non-asbestos fibers



## APPENDIX G: PAINT ANALYSIS/HISTORIC MATERIALS DATA

by

Historical Architect C. Craig Frazier, Western Team

Denver Service Center

### PAINT

Paint colors on the Giant Forest buildings are a significant architectural characteristic. The browns and greens were selected as one aspect of the NPS-Rustic style's imperative toward compatibility with natural surroundings. Through time, and with succeeding paint applications, the specific brown and green hues and color values have changed slightly, presumably, as a function of product availability. A combination of paint analysis and research concerning paint color usage was employed to develop the recommended color scheme outlined here.

#### Roof Color:

	<u>Market</u>	<u>Comfort Station</u>	<u>Ranger Residence</u>
original:	blue-green (Munsell #2.5 BG 3/6)	unpainted or blue-green (?)	spec. (see "Summary Chronology") "painting to conform to local buildings"
later:	same	blue-green	unpainted
present:	same but covered with red metal roofing	same but paint mostly gone	same

Recommended roof paint for all buildings: oil base (or phenolic enamel) semi-gloss, blue-green, Munsell color #2.5 BG 3/6 as per market roof sample. Note samples of original roofing from comfort station and ranger residence are not available.



Wall Color:

	<u>Market</u>	<u>Comfort Station</u>	<u>Ranger Residence</u>
original	probably a wood-colored, clear or brown stain (maybe unpainted?)	probably a glossy redwood stain (Munsell #5YR 3/4 approx.) brown - flat finish Munsell #7.5 YR 2/4 approx.	spec. "painting to conform to local buildings," probably brown (?)
later	brown	brown	brown
present	acrylic-latex, flat, called "GSI-Brown," an Allpro Custom-Mix of "Mauna Loa" plus H-3Y (3 oz. red colorant per gal.) by Wilshire Paints (Munsell color #5YR 3/4; approx. same as Fed. Color #10075)	phenolic enamel, flat, GSA "Earth Brown" (#30099); Munsell color #8.4 YR 3.5/2.0; NSN 8010-00-598-5182	lead-oil enamel, lusterless (flat), "Earth-Brown Camaflogue" (Fed. Color #30099); Munsell # 8.4 YR 3.5/2.0 corresponds at present to NSN 8010-00-598-5182

Recommended wall and door paint for market is same as that used presently. Recommended wall paint for both comfort station and ranger residence/garage is GSA "Earth-brown", NSN 8010-00-598-5182; Federal Standard (595a) Color #30099 which is equal to Munsell color #8.4 YR 3.5/2.0. This color is very similar to original in value.

Trim color:

	<u>Market--1930 sash</u> (interior side)	<u>Market--1938 sash</u>
earliest	wood-colored stain varnish; approximate Munsell # 7.5 YR 3/6	
		after 1938: dark green-yellow Munsell # 7.5 GY 6/6
present:	light green-yellow; Munsell # 5 GY 7/8	



Recommended sash color for all market windows is dark green-yellow, Munsell # 5 GY 6/6.

Comfort Station--Sash

Comfort Station--Doors

original: brown, same as walls, glossy; Munsell #5 YR 3/4

later: same

dark green; Munsell # 7.5 G 4/4

later (as in 1974 color photograph): light green; Munsell # 2.5 G 7/4

later: dark green; Munsell #7.5  
G 4/4

same

present: "earth brown" same as walls; Munsell # 8.4 YR 3.5/2.0

Recommended sash and door color same as walls; use NSN 8010-00-598-5182 (Munsell # 8.4 YR 3.5/2) as this paint is very similar to original in color.

Ranger Residence--Sash

original: spec. "painting to conform to local buildings;" probably brown stained same as walls (?)

later: dark green; Munsell # 2.5 GY 2/2

later: light green; Munsell # 2.5 G 7.4 (as in 1974 color photograph)

present: off-white latex

Recommended for all sash (and doors) dark green; Munsell #2.5 GY 2/2.

ROOFING

Market

Original shake approximately 5" to 5½" x 24" x 3/16" to 7/16" thick. Material was hand split from sugar pine. Approximately 10½" to weather



and laid with a  $\frac{1}{2}$ " to 1" spacing between shakes. Four nails per shake. 1 x 4 ridge boards were used. By 1973 about half of the roofing had been replaced with wood shingles with every fifth course doubled and the exposure reduced to about 4". About 10,000 shakes will be installed in the reroofing.

The dormer and 1938 shed roof were originally covered with roll roofing, only. This practice could be continued or, for additional strength and longevity, flat seamed metal roofing could be employed. These roof surfaces are generally invisible from the visitor point of view. Color of these roofs should be similar (or the same as) the painted shakes.

#### Comfort Station

Specifications (1932) called for a 24" Redwood shingle with 10" to weather and 5th course doubled over 1-ply roof paper. Present roof is a cedar shingle with 7" to weather and 6th course is doubled.

#### Ranger Residence

Specification (May 1931-see History Data, Summary Chronology) says "a standard roofing paper shall be placed between shingles and sheathing. 24" shingles to be used, 8 inch exposed to weather and doubled every 5th course. End shingles at eaves to have "kick up" as shown." Present shingle roof has no doubling of courses.

#### Other Materials

Comfort Station Glazing. Specification (1931) says, "all window glass to be 20 oz. ripple glass."



## APPENDIX H: PARTIAL RESTORATION ALTERNATIVE

by

Historical Architect C. Craig Frazier, Western Team, DSC

### BACKGROUND

The adaptive use of the market proposed in this HSR would create a floor plan where the primary entrance to the NPS operated interpretive half of the building would be through the west facade (gable end) of the south wing. Currently (and since about 1938) this facade has two sets of double doors with transoms but no windows. The fenestration during most of the 1930s (as seen in the photograph of this appendix) included a central pair of doors with transom flanked by large multipaned windows that were similar to those which are still extant on the south facade. This 1930s configuration was the product of the remodeling effort undertaken in 1930 to provide a "winter lounge room with large fireplace" (see History Data in this HSR). Why this configuration was altered to create the present form was not determinable through historical research.

Park Management Assistant, William Tweed observed that the 1930s facade was an attractive and more inviting visitor entrance than the present configuration. As part of the historic structure assessment, consideration was given to a 'partial' restoration of the market that would include a return to the 1930s design for the south wing. The purpose of this appendix is to document that consideration by discussing the pros and cons and implications of such an approach.

### IMPLICATIONS

To return to the 1930s facade configuration would involve removal of most of the exposed structural wall, both doors, transoms, and siding below the gable and between the corner puncheons (see drawings in this appendix). One of the two doors could be reused as could the two



puncheons adjacent to the doors. One of the two extant transoms could be reused.

Concrete would have to be removed for the threshold of the newly located central door while reinstallation of concrete would be necessary at the thresholds of the two removed doors.

Two 16-light windows would have to be fabricated and installed. The design of these could be based on the windows of the south elevation with dimensions adjusted as appropriate. New window sills and 6 X 8 wall sill plates would be similar to adjacent features.

Exterior non-historic accretions such as lighting conduit and pay-phones and interior knotty pine paneling wainscot, etc. would be removed in this alternative approach as well as in the general rehabilitation and preservation approach recommended elsewhere in this report. A major difference in this partial-restoration alternative would be the reconfiguration of interior paneling, trim, wainscot, etc. to reflect the restored facade.

The physical intervention would be extensive and would result in the loss of a door, transom, some concrete and several exposed framing members that are considered historic products of their own time and that have acquired some value in and of themselves. The reconfigured facade would introduce new materials--concrete, windows and some exposed framing members--but these could be fairly accurate duplications of features no longer extant.

#### PROS AND CONS

The restoration of the gable end of the south wing to its 1930s appearance can certainly be done; but, an examination of the following listing of advantages (pros) and disadvantages (cons) reveals the basis for the recommended approach.



Figure H-1. South wing of Market (1932). This view is a blow-up of that portion of figure 16 which best illustrates the fenestration of the gable end of the south wing during the 1930s. (Photo by Lindley Eddy; SEQU archives #03153)







### Pros/Advantages to Partial-Restoration

1. As a primary visitor entrance, the 1930s facade would be more inviting than the present configuration because windows would attract visitor entry while closed doors without windows may psychologically discourage entrance.
2. The south wing has witnessed three distinct exterior fenestration patterns. The first two were designed and built as comprehensive efforts--all three facades of the wing were created as a whole. The third fenestration pattern (the present one) is a product of a partial modification, i.e., the east and south elevations are still the ones of the 1930s design; while only the west or gable end was changed in ca. 1938. To return the gable end to its 1930s appearance would once again establish a comprehensive wing design.
3. Physical and photographic evidence for the 1930s facade is fairly good and that design could be recreated with minimal conjecture.

### Cons/Disadvantages to Partial-Restoration

1. The significant features of the market are largely intact (see Architectural Data, "Significance") and therefore, restoration of parts or all of the market is not "essential for public understanding and appreciation of the park's historical or cultural associations" as is required for restoration as a treatment under NPS Cultural Resources Management Guidelines (NPS-28 3.8).
2. Partial restoration--i.e., restoration of the gable end of the south wing to its 1930s appearance--would create a configuration of the building which never existed historically. During the 1930s when the south wing had a central doorway, the two additions of 1938 had not been built and the configuration of the north facade of the north wing had not taken its present form. To avoid creating a situation that never existed, a more

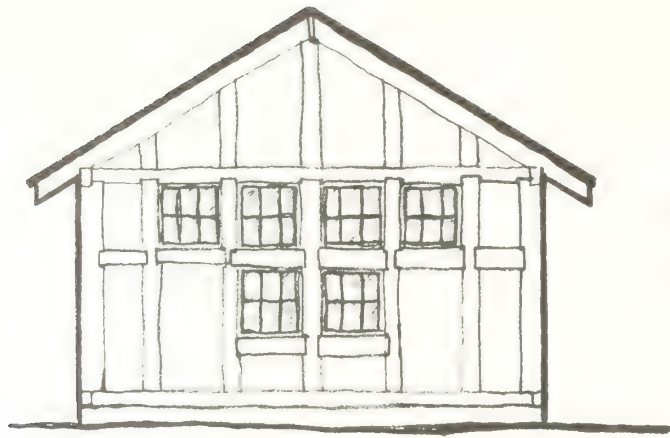


comprehensive restoration to the 1930s appearance would include removal of the additions, reconfiguring the north facade (see figures 17 and 18), restoration of the market rear wall, and reconstruction of the earlier rear addition(s). A great deal of conjecture would be required to design a complete building restoration to its 1930s configuration.

3. The preferred approach is to follow the "Secretary's Standards for Rehabilitation" (see Architectural Data, "Compliance with Regulations"). In this approach, as recommended in this HSR, treatments would restore the continuum of physical changes in the market through 1938--generally preserving its existing form--and would required a less destructive alteration than an attempt to return the building, or part of it, to a particular earlier appearance. This approach as stipulated in the "standards" would be characterized by:

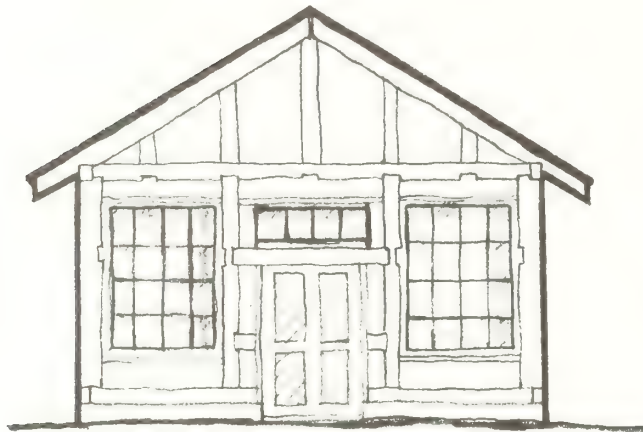
- (a) minimal alteration,
- (b) recognition of features of the building as products of their own time that may have acquired significance in their own right, and
- (c) maintaining the existing form, integrity, and material.





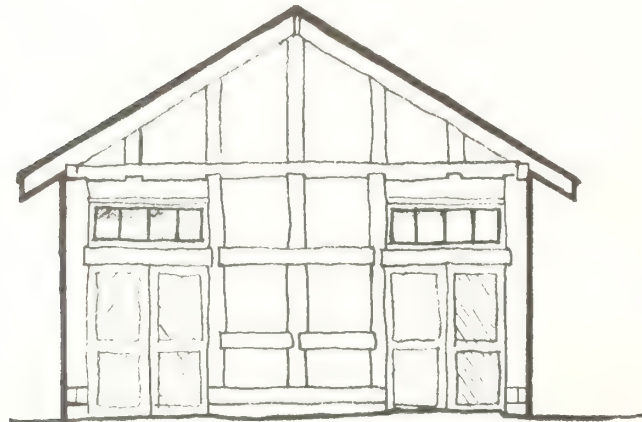
NO DOORS  
WINDOWS SIMILAR  
TO NORTH WING

1928 to about 1930



CENTRAL DOOR w/  
TRANSOM  
flanked by large  
PICTURE WINDOWS

1930 to about 1938



TWO DOORS w/  
TRANSOMS  
NO WINDOWS

SINCE about 1938

Figure H-2. Changes in West Facade of South Wing



## ANNOTATED BIBLIOGRAPHY

### PRIMARY MATERIALS

#### Manuscripts/Archives/Collections

Lakewood, Colorado

Files, Technical Information Center, Denver Service Center.

Sequoia National Park, California

Park Archives.

Park Drawings Files.

Park Historical Files.

Park Photograph Collection.

Superintendent's Annual Reports.

Superintendent's Monthly Reports.

Sequoia National Park Archives (Material on loan to park from Federal Records Center, National Archives and Records Service, San Bruno, California).

File No. C58.

File No. 620-58, Box 429148.

File No. 620-63, Box 429148.

File No. 620-75, Box 429148.

File No. 900.05.1.11.1, Box 16918.

#### Interviews

Personal interview with Robert Seney and Greg Leavey (employees of Guest Services, Inc.), May 8, 1986.

Personal interview with William C. Tweed (District Interpreter, Sequoia National Park), May 7, 1986.

Telephone interview with Kathy O'Connor (Archivist, Federal Records Center, National Archives and Records Service, San Bruno, California), April 16, 1986.

### SECONDARY MATERIALS

#### Books

Ise, John. Our National Park Policy: A Critical History. Baltimore, 1961.

White, John R., and Pusateri, Samuel J. Sequoia and Kings Canyon National Parks. Stanford, 1949.



## Published Documents

Annual Reports of the Director of the National Park Service, 1917-32.

## Technical Studies

Lowell, Waverly B. "Archival Survey of Sequoia and Kings Canyon National Parks." May 1985. (Sequoia National Park Library.)

National Register of Historic Places Inventory--Nomination Form. "Giant Forest Village/Camp Kaweah Historic District." May 22, 1978.

"Sequoia's Developing Years: A Photographic Album." (Sequoia National Park Library.)

Tobin, Daniel J. "A Brief History of Sequoia National Park." 1941. (typescript) [Files, Technical Information Center, Denver Service Center.]

Tweed, William C. "Parkitecture: A History of Rustic Building Design in the National Park System, 1916-1942." n.d. (draft typewritten mss.). [Files, Technical Information Center, Denver Service Center.]

U.S. Department of the Interior, National Park Service. Centennial Edition, National Park Service Officials, March 1, 1972.

\_\_\_\_\_. \_\_\_\_\_. Circular of General Information Regarding Sequoia and General Grant National Parks, 1930. In "Circulars of General Information, National Parks, 1930." (Sequoia National Park Library.)

\_\_\_\_\_. \_\_\_\_\_. Development Concept Plan, Giant Forest/Lodgepole Area of Sequoia and Kings Canyon National Parks. February 1980.

\_\_\_\_\_. \_\_\_\_\_. Draft Environmental Statement, DES 77-36, Proposed Development Concept Plan, Giant Forest/Lodgepole Area, Sequoia and Kings Canyon National Parks.

\_\_\_\_\_. \_\_\_\_\_. Environmental Assessment for the Modification of the Development Concept Plan, Giant Forest, Sequoia/Kings Canyon National Parks, California. July 1982.

\_\_\_\_\_. \_\_\_\_\_. Final Environmental Statement, FES 79-58, Proposed Development Concept Plan, Giant Forest/Lodgepole Area, Sequoia and Kings Canyon National Parks. June 1979.

\_\_\_\_\_. \_\_\_\_\_. Park and Recreation Structures, by Albert H. Good, 1938. Part I--Administration and Basic Service Facilities, and Part II--Recreational and Cultural Facilities.



- \_\_\_\_\_. Sequoia [California] National Park, 1937. In "Circulars of General Information, The National Parks, 1937." (Rocky Mountain Regional Office (NPS) Library.)
- \_\_\_\_\_. Sequoia-Kings Canyon National Parks, History of the Parks, Maps, Evaluation of Historic Resources, Determination of Effect, DCP, by A. Berle Clemensen. September 1975.
- \_\_\_\_\_. Branch of Planning. Park Structures and Facilities. 1935.
- \_\_\_\_\_. Harpers Ferry Center. Division of Interpretive Planning. Interpretive Prospectus: Sequoia and Kings Canyon National Parks, Giant Forest/Clover Creek District. January 1986.
- \_\_\_\_\_. Western Regional Office. Division of Cultural Resource Management. National Park Service Rustic Architecture: 1916-1942, by William C. Tweed, Laura E. Soulliere, and Henry G. Law. February 1977.

The principal primary documentary materials for this report were the park archives and the files on loan to the park from the Federal Records Center at San Bruno. Construction-related drawings for the three structures are on file in the park as well as the Technical Information Center in the Denver Service Center. Personal interviews with Robert Seney, Greg Leavey, and William C. Tweed provided data on the historical background of the structures and their utilization/modification during the past fifteen years. The secondary materials provided useful data on the history of Sequoia National Park, the evolution of rustic architecture in the national parks, and recent NPS planning efforts relating to the Giant Forest area.



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As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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